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OF THE

Public Health Commissioner

with the Government

of India

FOR

1923

With Appendices.

Volume I

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Annual Report of the Public Health Commissioner with the Government of India for 1923.

SECTION 1.

British Troops in India, 1923.

(From the Director, Medical Services in India.)

A.—GENERAL.

1. The following table (A-1) gives the average strength of British Regular Troops in India, and the main statistical facts regarding their health during 1923, with comparative figures for the quinquennial periods 1910-14 and 1915-19 and for the years 1915 to 1923 inclusive. It will be seen that, as compared with 1922, the figures for 1923 approximate still more closely to the average for the pre-war years 1910-14.

TABLE A-1.
Main Health Statistics by years.

Period.	Average strength.	Admissions.	Deaths.	Invalids sent home.	Average constantly sick.	RATIO PER 1,000 OF STRENGTH.				Average period of illness of each soldier calculated on average strength.	Average duration of each case of sickness.
						Admissions.	Deaths.	Invalids sent home.	Average Constantly sick.		
1910-14 (Average)	69,410	39,389	303	488	2,094.57	567.2	4.36	7.03	30.13	10.00	19.39
1915	44,891	36,952	267	889	1,754.19	823.1	5.95	19.80	39.08	14.26	17.53
1916	60,737	46,892	397	1,343	2,414.56	772.0	6.54	22.11	39.75	14.55	18.85
1917	80,825	62,372	390	1,337	3,686.45	771.7	4.83	16.54	45.60	16.65	21.57
1918	87,982	90,537	1,424	2,097	5,286.61	1030.2	16.19	22.81	60.00	21.93	21.29
1919	56,561	54,982	438	4,324	3,245.84	972.1	7.74	76.40	57.39	20.95	31.55
1915-19 (Average)	66,199	58,367	1,980	3,277.53	881.7	8.81	29.91	49.51	18.07	20.50	
1920	57,332	61,429	314	3,488.08	1071.5	6.72	40.36	60.84	22.27	20.78	
1921	58,681	60,515	49	3,070.04	1031.3	6.95	12.76	52.32	19.10	18.52	
1922	60,166	37,836	14	1,903.32	628.9	4.72	11.87	31.62	11.54	18.35	
1923	63,139	37,593	79	1,793.31	595.4	3.75	15.51	28.40	10.37	17.41	

The main feature of the table is the progressive rise in the general sick rates that occurred during and after the Great War, followed by a sudden drop in 1922. The fall has become still more marked during 1923.

The causes of the deterioration in the health of the troops during the post-war years, leading to an admission rate of 1071.5 in 1920, have been fully discussed in previous reports. The improvement that set in during 1922, when the admission rate was 628.9, has been continued during the year under review, and the admission rate has now been reduced to 595.4, or very little higher than the pre-war rate of 567.2 in the quinquennium 1910-14.

But for a severe epidemic of Malaria in the Northern Command the figure for 1923 would have been approximately the same as that for 1910-14.

The death rate in 1923 was the second lowest on record, being only 3.75 per 1,000 of strength, as compared with 6.95 in 1921 and 4.72 in 1922. (The lowest on record is 3.26 in 1913.)

The invaliding rate, based on comparatively small figures, was 15.5 in 1923 as compared with 11.87 in the preceding year, a rise of 3.13 per 1,000.

The average constantly sick rate for 1923 establishes a record, being 23.4 per 1,000 as against 31.62 in 1922 and 30.13 in the quinquennium 1910-14.

The very satisfactory fall both in the average constantly sick and in the death-rate may be taken as an indication of the advance in methods of treatment that has recently taken place.

This is still further emphasized by the "average duration of each case of sickness," which has fallen to 17.41 days as compared with 18.35 in 1922 and 19.39 in the quinquennium 1910-14.

The "average period of illness of each soldier, calculated on the average strength," which for the quinquennium 1910-14 stood at 10.00 days per soldier, was 10.37 in 1923 as against 11.54 in 1922 and 22.27 in 1920.

The general effect of Table A.-1 is to demonstrate that the health of the British Army in India has at last returned to the level at which it stood in the years immediately preceding the Great War.

2. The actual numbers of cases treated and constantly sick in barracks, with ratios per 1,000 for each Command and for the whole of India, are shown in Table A.-2.

TABLE A.-2.
Barrack Treatment.

Command.	ACTUALS.		RATIO PER 1,000.	
	Placed on sick list.	Constantly sick.	Placed on sick list.	Constantly sick.
Northern	21,751	394.55	1314.8	19.62
Western	6,814	92.73	1270.5	17.21
Eastern	25,251	319.10	1501.9	20.76
Southern	28,102	328.79	1234.9	17.58
Burma District	2,333	37.29	1166.5	18.65
Waziristan District	2,158	27.74	1074.7	13.81
Aden Brigade	777	12.41	601.8	10.67
All India	82,216	172.81	1,302.1	18.57

The statistics of cases treated in barracks (inpatients and outpatients) appeared for the first time in the Annual Report for 1922. The method of collection was admittedly open to fallacies and the figures were not considered sufficiently accurate to be worthy of comment.

During 1923 administrative measures were inaugurated with the object of obtaining reliable statistics but the full effect of these will not be apparent until next year.

Table A.-2 shows for men under treatment in barracks during 1923 a ratio of 1302.1 per 1,000 of strength which, judging from the statistics of troops in the United Kingdom, represents more accurately the actual figure than the ratio of 653.9 in 1922, based on the imperfect records then available.

The ratio per 1,000 of constantly sick under barrack treatment in 1923 was 18.57, with which we have only the inaccurate figure of 10.40 in 1922 to compare.

3. The ratios per mille of admissions for, and deaths from, the principal diseases for the quinquennial periods 1910-14 and 1915-19 and for the years 1915 to 1923 inclusive are shown in Tables A-3 and A-4.

TABLE A-3.

Admission ratios for the chief diseases by years.

Ratios are per 1,000 of average strength.

Period.	Influenza.	Cholera.	Scarlet fever.	Typhoid Group of fevers.	Malaria.	Sandy fever.	Pyrexia of uncertain origin.	Rheumatic fever.	Heat-Stroke.	Circulatory Diseases.	Pulmonary culosis.	Tuber.	Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic Abscess.	Hepatic congestion and Inflammation.	Scabies.	Veneral Diseases.	All causes.	Constantly sick.
1910-14 (Average)	3.3	0.3	1.3	3.3	117.2	21.9	22.8	4.5	1.2	7.4	1.1	2.4	12.6	6.5	21.9	0.7	7.6	3.98	55.1	567.2	30.13	
1915	7.4	0.4	0.1	3.7	154.5	41.1	9.8	11.5	4.6	14.7	1.1	2.7	21.3	5.6	26.5	0.5	6.5	5.30	29.1	825.1	39.09	
1916	6.8	0.8	0.4	5.2	186.0	45.9	7.4	7.5	5.8	18.5	1.9	2.9	23.9	8.2	26.5	0.7	6.3	7.11	36.8	772.0	39.75	
1917	7.3	0.2	0.4	3.4	227.0	22.9	4.2	4.7	1.5	14.3	1.5	2.8	23.7	11.1	25.7	0.6	4.9	10.24	52.0	771.7	45.60	
1918	219.5	1.0	1.3	7.5	200.2	30.0	1.2	3.6	10.4	18.7	1.8	3.1	27.4	13.8	24.4	0.7	4.1	5.74	62.5	1030.2	60.0	
1919	54.2	0.4	3.1	4.5	217.6	51.5	1.2	3.8	7.4	20.7	1.5	5.1	32.5	14.2	31.1	0.9	4.0	11.49	87.0	972.1	57.39	
1915-10 (Average)	68.6	0.6	1.1	5.1	219.5	36.3	4.6	5.7	6.0	18.4	1.6	3.3	25.9	11.1	26.5	0.7	5.3	8.04	55.0	881.7	46.21	
1920	14.8	0.0	0.4	4.6	176.6	91.8	2.0	4.2	6.1	17.4	1.4	4.4	28.7	10.1	32.5	0.5	3.0	17.98	118.2	1071.5	60.84	
1921	7.6	0.6	0.5	3.4	221.7	74.8	0.6	3.1	3.7	10.9	1.1	4.0	24.7	12.1	26.2	0.6	4.6	4.8	110.4	1031.3	52.32	
1922	9.6	0.0	0.4	3.0	175.4	28.9	0.7	2.2	3.4	7.8	0.8	3.2	20.5	9.5	10.8	0.4	2.7	2.7	84.7	928.9	31.03	
1923	1.8	...	0.2	2.3	172.2	28.6	0.6	1.9	6.3	7.5	1.1	3.1	18.7	13.2	8.2	0.8	2.1	2.0	71.3	595.4	28.40	

N. B.—The order in which the diseases appear in the text and tables of this report conform as far as possible with the order in which they appear in the prescribed tables I to XIII which are appended.

TABLE A-4.

Death ratios from the chief diseases by years.

(Ratios are per 1,000 of the average strength.)

Period.	Influenza.	Cholera.	Small-pox.	Enteric Group of fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heart-Stroke.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Veneral Diseases.	All causes.
1910-14 (Average)	...	0.14	0.01	0.37	0.13	...	0.02	0.31	0.23	...	0.16	0.26	0.08	0.19	...	0.33	0.02	0.05	4.36
1915	...	0.18	...	0.36	0.36	...	...	0.07	0.74	0.42	0.11	0.38	0.07	0.29	...	0.20	0.02	0.02	5.95
1916	...	0.31	0.07	0.54	0.31	...	0.10	0.02	0.74	0.33	0.18	0.54	0.10	0.30	...	0.21	0.03	0.03	6.54
1917	...	0.16	0.11	0.41	0.48	...	0.01	...	0.15	0.20	0.16	0.36	0.17	0.26	...	0.16	0.01	0.04	4.83
1918	8.81	0	0	0	0.65	...	0.01	0.02	1.10	0.47	0.20	0.59	0.20	0.25	...	0.25	0.02	0.03	16.19
1919	0.25	0.19	0.34	0.44	0.74	...	...	0.02	0.74	0.39	0.18	0.92	0.30	0.28	...	0.19	0.04	0.02	7.74
1915-19 (Average)	2.39	0.27	0.15	0.51	0.53	...	0.03	0.02	0.69	0.33	0.17	0.56	0.18	0.27	...	0.21	0.03	0.03	8.81
1920	0.07	...	0.07	0.45	0.42	...	...	0.02	1.31	0.44	0.16	0.70	0.10	0.16	...	0.21	0.03	0.07	6.72
1921	0.03	0.39	0.12	0.34	0.75	...	...	0.03	1.14	0.36	0.14	0.53	0.46	0.15	...	0.26	...	0.02	6.95
1922	0.02	0.02	0.17	0.42	0.43	...	...	...	0.27	0.18	0.15	0.40	0.22	0.08	...	0.15	...	0.01	4.72
1923	0.02	...	0.05	0.19	0.27	...	0.02	0.03	0.52	0.25	0.13	0.19	0.11	0.13	...	0.05	...	0.03	3.75

These tables show a decrease for all classes of disease with the exception of heat-stroke, dysentery and pulmonary tuberculosis, each of which shows an increase in admissions, while heat-stroke and dysentery had a higher death-rate as well.

In the case of heat-stroke, a malady depending almost entirely on uncontrollable climatic conditions, the increase was considerable, giving an admission rate of 6.8 as compared with 3.4 in the preceding year and a death rate of 0.52 as compared with 0.37 in the preceding year.

The admissions and deaths for dysentery were 13.2 and 0.13 respectively as compared with 9.5 and 0.08 in 1922.

In the case of pulmonary tuberculosis there was an increase in the admission rate from 0.8 in 1922 to 1.1 in 1923, but the death-rate showed a decrease from 0.15 in 1922 to 0.13 in 1923.

With these exceptions reductions were shown in the case of all diseases, pointing again to an improved standard of health.

The decrease in the case of Influenza was very striking, the admission rate being 1.8 as compared with 9.6 in the preceding year and 3.3 in the period 1910-14.

A further substantial decrease is shown in the enteric group of fevers, the admission rate being 2.3 as compared with 3.0 in 1922 and 3.3 in the period 1910-14. The death-rate fell to 0.19 as against 0.42 in 1922 and 0.37 in 1910-14.

Malaria is still the outstanding cause of admissions to hospital, but even in this case a slight decrease is shown, the rate being 172.2 as compared with 175.4 in 1922 and 321.7 in 1921.

4. Table A-5 shows the distribution of disease by Commands, the admission rate and the death-rate being given separately by diseases for each Command and for troops on the line of march.

TABLE A-5.

Admission and Death ratios for the chief diseases during 1923 by Commands and Independent Districts.

(Ratios are per 1,000 of strength.)

Strength.		Douglas.	Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandy Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-Stroke.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Veneral Diseases.	All causes admissions.	All causes deaths.	Constantly sick.	
Northern Command.	16,543	Admns.	0.3	2.7	...	0.3	3.1	343.3	68.1	0.1	2.1	1.9	8.5	1.3	4.3	17.4	8.2	4.6	0.4	1.4	56.8	733.8	...	50.20
		Deaths	...	...	...	0.06	0.19	0.24	...	...	0.06	0.54	0.30	0.19	0.38	0.13	0.24	...	0.06	...	0.06	...	3.51	...
Eastern Command.	10,813	Admns.	30.2	0.5	...	0.2	3.0	105.8	21.4	0.7	1.6	13.6	6.7	1.2	8.2	24.4	11.9	10.6	0.3	3.6	72.3	570.0	...	28.73
		Deaths	...	...	...	0.06	0.06	0.24	...	...	...	0.89	0.06	1.13	0.18	0.18	0.06	...	0.06	...	0.06	...	3.51	...
Western Command.	5,367	Admns.	3.5	...	...	0.4	1.9	67.6	2.8	0.3	2.8	0.7	6.9	0.8	2.4	21.5	24.7	6.1	0.6	2.4	71.7	441.4	...	23.04
		Deaths	...	...	...	0.37	...	...	...	...	...	...	0.19	...	0.19	...	...	...	...	...	...	...	2.41	...
Southern Command.	18,707	Admns.	12.7	0.1	...	2.4	64.0	4.8	0.6	2.0	6.3	8.5	1.1	2.4	13.8	17.0	6.1	0.3	1.7	66.2	484.3	...	27.30	
		Deaths	...	...	...	0.37	0.38	...	0.05	0.05	0.43	0.48	0.16	0.05	0.05	0.16	...	0.05	...	...	...	...	4.28	...
Burma District.	2,000	Admns.	112.0	...	...	0.5	53.5	...	...	0.5	0.5	4.5	1.0	1.0	19.0	7.5	19.0	...	1.5	113.5	645.5	...	34.50	
		Deaths	...	...	...	...	0.50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2.00	...
Warisistan District.	2,008	Admns.	0.5	26.9	...	...	1.0	58.2	47.8	0.5	1.5	12.9	6.0	1.0	4.5	20.4	16.4	28.9	0.5	...	35.4	1140.9	...	43.24
		Deaths	...	0.50	...	...	1.00	...	...	...	0.50	...	...	0.50	0.50	...	...	...	...	...	...	...	7.47	...
Aden Brigade.	1,174	Admns.	...	...	...	0.9	21.3	94.5	...	0.9	0.9	3.4	0.9	2.8	8.2	4.3	6.0	...	2.6	34.1	366.3	...	15.60	
		Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.85	...
Troops on the line of march.	248	Admns.	...	...	...	...	28.5	28.5	46.8	...	16.3	...	...	...	4.1	4.1	36.6	...	...	...	24.4	638.2	...	3.82
		Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wana Column.	261	Admns.	...	26.8	...	...	195.4	...	...	...	...	...	...	...	7.7	...	3.8	...	...	...	19.2	430.8	...	2.30
		Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26.82	...

This Table again points unmistakably to the importance of biting insects as producers of disease—malaria, dengue, sandfly fever.

It is entirely owing to its comparative freedom from insect-borne disease that the Western Command is able to show the lowest admission rate, *viz.*, 441.4 per 1,000.

The North of India, comprising the Northern Command and Waziristan (now included therein), furnishes by far the greatest numbers of admissions for insect-borne diseases, the admission rate in Waziristan reaching the remarkable figure of 585.2 per 1,000 for Malaria alone, while the Northern Command follows with 343.8 per 1,000.

Of the more important areas Burmah gives the lowest figure for Malaria, *viz.*, 53.5 but the highest for Dengue, *viz.*, 112.0 per 1,000.

A study of Table A-5 leads infallibly to the conclusion that of all health measures that can be devised those directed towards the reduction of insect-borne, chiefly mosquito-borne, diseases are the most likely to produce results of importance in the reduction of sickness and of medical expenditure and in raising the health efficiency of the Army and its fitness for active service.

The admission rates for Dysentery are in order as follows :—

Western Command	24.7
Southern Command	17.0
Waziristan District	16.4
Eastern Command	11.3
Northern Command	8.2
Burma District	7.5
Aden Brigade	4.3
Troops on the line of march	4.1

5. Table A-6 shows the stations in which the admission rate was higher than that for all India.

TABLE A-6.

Stations with admission rate higher than all India (1923).

Stations.	Average strength.	Admissions per 1,000.	Deaths per 1,000.	Average constantly sick per 1,000.
Lahore	1180	1437.3	5.93	49.89
Calcutta	1085	1158.5	7.97	56.24
Peshawar	1456	890.8	4.80	31.71
Nowshera	1093	709.0	0.91	27.07
Rawalpindi	2505	686.2	2.79	38.08
Poona	2306	654.4	5.20	50.78
Delhi	1061	640.9	2.83	23.71
Lucknow	2915	607.3	3.46	23.88
Karachi	1286	599.5	3.11	33.54

Lahore suffered from a very severe epidemic of Malaria during August, September and October. Of the 1437 admissions per 1,000, no less than 1077 per 1,000 were for Malaria:—

	1922.	1923.
Malaria	246.28	1077.1
Veneral diseases	102.23	141.5
All other causes	310.41	218.7
	<hr/>	<hr/>
Total	658.92	1437.3
	<hr/>	<hr/>

These figures show that, apart from Malaria, *Lahore* is a remarkably healthy station.

The exceptionally high admission rate in *Calcutta* 1158.5 was largely due to a severe outbreak of Dengue, with 400 admissions in a strength of 1085. Malaria caused 157 admissions. Of these 92, or 84.8 per mille, chiefly relapses, were from Fort William and 59, or 54.4 per mille, from Dum Dum. Fort William is now much less malarious than formerly.

Veneral disease, always difficult to control in *Calcutta*, was responsible for 183.4 admissions per 1,000.

Peshawar.—For the last 18 years, with the exception of 1919 and 1922, *Peshawar* has had an admission rate of over 1,000 per 1,000. The ratio for the year under review *viz.*, 890.80 per 1,000, cannot therefore be considered unduly high for *Peshawar*. Malaria was responsible for 698 admissions in a strength of 1456, or 479.38 per 1,000.

6. Table A-7 shows, for each of the stations in Table A-6, the admission and death ratios by groups of diseases and also the constantly sick rate for all causes of sickness.

TABLE A-7.

Admission and Death Ratios during 1923 by diseases for stations having over 1,000 strength.

(Ratios are per 1,000 of the average strength.)

Stations.	Strength.	Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandy Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heat-stroke.	Circulatory diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory diseases.	Dysentery.	Diarrhea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral diseases.	All causes.	Constantly sick.	
Lahore	1,180	Admissions	...	0.8	0.8	1077.1	...	...	0.8	...	2.5	2.5	5.1	6.8	16.1	12.7	...	0.8	...	141.5	1,437.3	40.69	
		Deaths	...	...	...	...	...	...	0.85	0.85	...	...	2.54	...	...	...	...	...	...	...	...	5.93	...
Calcutta	1,085	Admissions	1.8	...	...	4.7	...	...	...	11.1	12.0	1.8	3.7	47.9	24.0	7.4	...	7.4	...	183.4	1,158.5	56.24	
		Deaths	...	...	...	...	0.92	...	...	...	...	...	0.92	...	...	...	...	...	...	...	...	7.37	...
Peshawar	1,456	Admissions	1.4	...	1.4	479.4	69.4	0.7	4.8	0.7	18.5	1.4	3.4	19.9	4.8	3.4	...	1.4	0.7	52.2	690.8	31.71	
		Deaths	...	...	...	...	0.69	...	...	0.69	...	...	...	1.37	...	...	...	...	...	...	...	4.80	...
Nowahera	1,093	Admissions	...	...	6.4	385.2	40.2	...	2.7	5.5	5.5	0.9	6.4	20.1	0.9	2.7	...	...	...	38.4	709.0	27.07	
		Deaths	...	...	...	...	...	...	...	0.91	...	...	...	...	...	...	...	...	...	...	...	0.91	...
Rawalpindi	2,505	Admissions	...	...	1.2	279.8	12.4	...	2.4	0.4	13.6	1.2	4.0	27.9	6.8	0.4	...	1.6	4.4	91.4	636.2	38.98	
		Deaths	...	...	...	...	...	...	...	...	0.40	0.40	...	...	0.40	...	...	...	...	...	...	2.79	...
Poona	2,306	Admissions	...	0.4	1.3	180.0	...	0.4	3.0	...	19.5	1.3	1.3	11.7	14.7	12.6	...	0.9	1.7	73.7	654.4	50.78	
		Deaths	...	...	0.87	0.43	...	...	...	...	0.87	0.43	0.43	...	...	...	0.43	...	...	...	...	5.20	...
Delhi	1,061	Admissions	...	1.9	...	283.7	15.1	...	2.8	10.4	8.5	0.9	0.9	12.2	14.1	7.5	...	5.7	3.8	83.9	640.9	28.71	
		Deaths	...	...	...	0.94	...	...	...	1.69	...	...	...	...	...	...	...	...	...	...	...	2.83	...
Lucknow	2,315	Admissions	0.4	...	0.4	1.7	46.2	73.4	0.4	2.6	21.2	4.3	0.9	1.3	14.7	19.0	19.9	0.4	1.3	2.2	57.4	607.3	28.88
		Deaths	0.43	1.30	...	0.43	3.46
Karachi	1,286	Admissions	...	...	1.6	0.8	134.5	0.8	...	3.1	0.8	14.8	0.8	2.3	14.8	4.7	9.3	...	5.4	...	105.8	599.5	33.54
		Deaths	0.78	3.11

This table again emphasizes the importance of Malaria and its responsibility for the high admission rate. In only two stations of the group was the malaria rate exceeded by that of another disease, *viz.*, Lucknow, where 73·4 admissions per 1,000 were attributed to Sandfly Fever and 57·4 to Venereal disease, as against 46·2 for Malaria, and Calcutta, where venereal disease gave an admission rate of 183·4 as against 144·7 for Malaria.

While Malaria is chiefly responsible for the high admission rates in this group of stations, the constantly sick ratios are attributable mainly to venereal disease.

B. SPECIAL DISEASES.

7. *Influenza*.—A remarkable drop took place in the incidence of this disease in 1923. The admission and death ratios per mille were 1·8 and 0·02, respectively, as against 9·6 and 0·02 in the preceding year.

Tables B-1 and B-2 show the distribution by Commands.

TABLE B-1.

Influenza.

Admissions and deaths by Commands.

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	44	2·7	...	...	...
Western . . . . .	...	...	...	...	...
Eastern	9	5	...	...	...
Southern	2	...	...	...	...
Burma District . . . . .	...	...	...	...	...
Waziristan District	54	26·9	1	0·50	1·9
Aden Brigade . . . . .	...	...	...	...	...
Wana Column	7	26·8	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	116	1·8	1	0·02	0·9

TABLE B-2.

Influenza.

Stations showing highest incidence.

Station.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Razmak	53	60.5	1	1.14	1.9
Naini Tal	4	38.1	...	...	...
Cherat	12	33.3	...	...	...
Gharial	11	26.9	...	...	...
Wana Column	7	26.8	...	...	...
Landi Kotal	17	19.4	...	...	...

8. *Cholera*.—There were no admissions for Cholera during 1923, as compared with one during the previous year.

9. *Small-pox*.

(i) There were 14 admissions for this disease, as against 25 in 1922.

Admissions and deaths from Small-pox from 1918 to the present year are contrasted in Table B-3.

(ii) The distribution by Commands and Stations is shown in Table B-4.

TABLE B-3.

Small-Pox.

Admissions and deaths by years.

	1918.	1919.	1920.	1921.	1922.	1923.
Actual Admissions	117	173	24	32	25	14
Ratio per mille	1.3	3.1	0.4	0.5	0.4	0.2
Actual Deaths	18	19	4	7	10	3
Ratio per mille	0.20	0.34	0.07	0.12	0.17	0.05

TABLE B-4.

Small-Pox.

Admissions and deaths by Commands and Stations.

Command.	Station.	Admissions.	Deaths.	Case mortality per cent.
Northern	Peshawar	2	...	} 25.0
	Lahore	1	...	
	Multan	1	1	
Eastern	Lucknow	1	1	} 25.0
	Delhi	2	...	
	Agra	1	...	
Western	Karachi	2	1	50.0
Southern	Jhansi	1	...	} ..
	Bombay	1	...	
	Bangalore	1	...	
	Poona	1	...	
India	14	8	21.0

10. *Enteric Group of Fevers.*

I.—The admission ratio for this group shows a further satisfactory fall, being 2.3 per mille as against 3.0 in 1922.

This is the same as for 1913, the lowest admission rate on record.

The case mortality was much lower in 1923 and consequently the ratio for deaths fell from 0.42 to 0.19 per mille, the lowest on record. Table B-5 shows admissions and deaths since 1910.

TABLE B-5
Total Admissions and Deaths. Enteric Group of Fevers by years.

	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14 (average)	226	3.3	26	0.37
1915	167	3.7	16	0.36
1916	318	5.2	32	0.51
1917	276	3.4	33	0.41
1918	683	7.5	62	0.70
1919	257	4.5	25	0.44
1915-1919 (average)	336	5.1	34	0.51
1920	262	4.6	26	0.45
1921	202	3.4	20	0.34
1922	180	3.0	25	0.42
1923	144	2.3	12	0.19

In Table B-6 are shown the admissions for each member of the Enteric group of fevers since 1910, with the case mortality in those cases that were definitely diagnosed.

TABLE B-6.

Enteric Fevers.

Average strength.	Typhoid fever.		Para-typhoid. "A"		Para-typhoid. "B"		Para-typhoid "C"		Enteric group.		TOTAL:	
	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1910-1914 (Average) . . . 69,440	153	24	70	2	3	...	...	...	...	...	236	26
Case mortality %—	15.6		2.8		...		...		..		...
1915 . . . 44,891	83	16	78	...	6	...	...	...	...	...	167	16
	19.2		...		...		...		...		...
1916 . . . 60,787	116	27	194	6	8	...	...	...	...	...	318	33
	23.2		3.0		...		...		...		...
1917 . . . 80,825	163	27	102	6	11	...	...	...	...	...	276	33
	16.5		5.8		...		...		...		...
1918 . . . 87,982	97	23	209	8	8	...	...	...	349	31	668	62
	23.7		3.8		...		...		...		...
1919 . . . 58,561	56	14	74	1	1	...	...	...	126	10	257	25
	20.5		1.3		...		...		...		...
1915-19 (Average) . . . 66,199	102	21	131	4	7	...	...	...	95	5	336	34
	21.3		3.0		...		...		...		...
1920 . . . 57,332	46	7	42	2	1	...	...	...	173	17	262	26
	15.2		4.7		...		...		...		...
1921 . . . 58,681	43	6	25	2	6	...	1	...	127	12	202	20
	13.9		3.0		...		...		...		...
1922 . . . 60,166	66	14	15	1	2	...	2	...	94	10	180	25
	21.2		6.2		...		...		...		...
1923 . . . 69,189	42	6	21	1	10	...	...	...	68	5	144	12
	14.3		4.7		...		...		...		...

* This total includes one admission for Para. "B" Carrier and two admissions for Typhoid Fever Carrier.

II.—Table B-7 shows the distribution of cases by Commands, while Table B-8 gives a list of stations with the largest number of cases.

TABLE B-7.

Enteric Fevers.

Admissions and deaths by Commands.

Command.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Northern	52	3.1	2	0.12
Western	10	1.9	2	0.37
Eastern	33	2.0	1	0.06
Southern	45	2.4	7	0.37
Burma District	1	0.5	...	...
Waziristan District	2	1.0	...	...
Aden Brigade	1	0.9	...	...
Troops on the line of march . . . . .	...	...	...	...
Wana Column . . . . .	...	...	...	...
ALL INDIA	144	2.3	12	0.19

TABLE B-8.

Enteric Fevers.

Stations showing highest incidence.

Station.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Ferozepore	11	12.2	...	...
Bangalore	9	4.4	1	0.49
Meerut	8	3.8	1	0.48
Mhow	8	5.0	...	...
Kamptee	8	8.9	1	1.12
Bellary	8	24.5	2	6.13
Quetta	7	2.7	2	0.77
Nowshera	7	6.4	...	...
Allahabad	6	6.4	...	...
Cherat	5	13.9	...	...
Lucknow	4	1.7	...	...
Dinapore	4	5.3	...	...
Sialkot	4	3.2	...	...
Dalhousie	4	9.4	...	...

The Northern Command heads the list with an admission rate of 3.1 per 1,000, while Burma has the lowest rate, namely 0.5 per 1,000.

Ferozepore.—11 cases. 3 cases occurred in the 35th Howitzer Battery R. F. A., and 8 in the 2nd King's Own Yorkshire Light Infantry. Of the latter 4 cases occurred in November and 4 in December. All were from the same bungalow and were ascribed to the presence of 2 men who had been treated for "Enteric group" at Kasauli and after negative tests at the Enteric Fever Convalescent Depot at Naini Tal had joined their unit at Ferozepore on 20th September. These 2 men were sent back to Naini Tal on 26th December, after which no further cases occurred.

Bangalore.—9 cases, of which 6 were in the 2nd Wiltshire Regiment, 5 being Typhoid Fever and 1 Enteric group. 4 of these prior to admission had been on duty at Camp Hebbal where they bathed very often in a contaminated pool. This pool was put out of bounds, after which no further cases occurred. All four had been protected with the double dose system: 3 recovered and one died.

Meerut.—8 cases. The cases occurred in 4 different units and the source of infection could not be traced.

Bellary.—With 8 cases had the highest admission rate per 1,000. All the cases were in the Wing 1st Green Howards, and no definite source of infection could be traced. 2 of the cases ended fatally.

III.—The two main sources of infection in this group of fevers are (a) carriers and (b) infected food purchased from unauthorized sources.

All menials employed in barracks are subjected to a thorough examination (including serological) before being employed in barracks. Those employed are inoculated and inspected periodically by the medical officer of the unit. No man in the unit itself who is known to be a potential carrier is employed on any duties connected with food, while enteric convalescents are sent to a convalescent depot.

IV.—An analysis of the cases (including troops and families) is shown in Table B-9. "Protected" cases are those inoculated with one or with two doses of T. A. B. vaccine within one or two years respectively. The "unprotected" cases include (a) those inoculated outside the above periods and (b) those not inoculated.

TABLE B-9.
Enteric Group of Fevers (1923).

		Cases.	Deaths.	Case-mortality.	COMPLICATIONS.			Complication rate.
					Haem.	Perf.	Throm.	
Typhoid Fever.	{ Protected . . .	60	8	13.3%	6	1	...	11.6%
	{ Unprotected . . .	8	2	25.0%	1	...	2	37.5%
Paratyphoid "A"	{ Protected . . .	28	1	3.5%	2	...	1	10.7%
	{ Unprotected . . .	5	...	...	...	...	...	...
Paratyphoid "B"	{ Protected . . .	11	...	...	1	...	...	9.0%
	{ Unprotected . . .	...	...	...	...	...	...	...
Enteric Group.	{ Protected . . .	73	3	4.1%	3	3	2	10.9%
	{ Unprotected . . .	13	2	15.4%	...	...	...	...

Table B-9 should be read in conjunction with Table B-10, which gives the inoculation state of British Troops and shows that 87.2 per cent. of officers and 95.1 per cent. of other ranks were "protected".

TABLE B-10.

Inoculation state of British Troops.

	OFFICERS.			OTHER RANKS.		
	1921.	1922.	1923.	1921.	1922.	1923.
Total number present on 31st December.	3,197	2,913	2,846	59,929	59,234	60,406
Number unprotected	509	375	363	3,100	2,906	2,790
Number protected	2,677	2,538	2,483	56,755	56,328	57,616
Percentage (of troops) protected	83%	87.1%	87.2%	94%	95.0%	95.1%

V.—The control of enteric fevers in India continued to centre in the Enteric Fever Convalescent Depots at Naini Tal and Wellington, for the North and South of India, respectively. The admissions to the two depots during the years 1917 to 1923 are shown in Table B-11.

TABLE B-11.
Enteric Group of Fevers.

Year.	ADMISSIONS TO ENTERIC CONVALESCENT DEPOT AT NAINI TAL.			ADMISSIONS TO ENTERIC CONVALESCENT DEPOT AT WELLINGTON.		
	From the Garrisons in India.	From Overseas Garrisons.	Total.	From the Garrisons in India.	From Overseas Garrisons.	Total.
1917	339	14	353	163	926	1089
1918	338	10	348	266	...	266
1919	243	...	243	126	...	126
1920	196	...	196	65	2	37
1921	192	...	192	27	4	31
1922	152	...	152	22	...	22
1923	122	...	122	29	...	29

VI.—These depots are very valuable in the detection of carriers and in the confirmation of laboratory findings. The classification of the cases admitted and of the carriers detected is shown in Table B-12.

TABLE B-12.
Enteric Group of fevers.

Year.	Enteric Convalescent Depot.	CASES ADMITTED.							CARRIERS DETECTED.								Total including mixed infections.	
		Typhoid.	Para. "A".	Para. "B".	Para. "C".	Enteric Group.	Other diagnosis chiefly Pyrexia of Uncertain Origin.	Total.	B. TYPHOUS.		B. PARATYPHOUS A.		B. PARATYPHOUS B.		B. PARATYPHOUS C.			
									Faecal.	Urinary.	Faecal.	Urinary.	Faecal.	Urinary.	Faecal.	Urinary.		
1915	Naini Tal	45	80	5	...	...	75	185	...	...	4	...	1	...	...	...	...	...
	Wellington	77	33	1	...	...	15	124	...	...	3	...	...	...	...	...	...	...
1916	Naini Tal	34	98	6	...	...	278	412	1	1	28	4	4	1	...	...	...	...
	Wellington	670	483	75	...	...	253	1,480	1	2	38	7	5	...	...	...	...	58
1917	Naini Tal	44	60	4	...	...	231	330	3	1	9	...	...	...	...	...	...	18
	Wellington	416	443	90	...	...	131	1,069	13	4	34	2	1	...	...	...	...	53
1918	Naini Tal	26	57	3	...	222	40	348	1	2	6	2	1	...	...	...	...	13
	Wellington	53	151	3	...	50	10	266	10	2	20	2	...	...	...	...	...	30
1919	Naini Tal	41	31	...	...	160	11	243	2	...	2	...	...	...	...	...	...	4
	Wellington	26	66	...	...	34	...	126	3	2	6	4	...	...	...	...	...	10
1920	Naini Tal	24	30	...	...	138	16	196	3	1	2	...	...	...	...	...	...	6
	Wellington	5	19	...	...	11	2	37	...	...	4	...	...	...	...	...	...	5
1921	Naini Tal	41	16	7	1	04	33	193	9	3	1	2	4	3	1	...	...	17
	Wellington	3	8	...	...	21	...	31	1	1	2	...	...	...	...	...	...	4
1922	Naini Tal	56	13	2	...	81	16	170	5	4	2	...	...	...	...	...	...	14
	Wellington	1	6	...	...	12	3	23	...	...	1	...	...	...	...	...	...	1
1923	Naini Tal	26	10	6	...	45	27	123	10	...	7	1	1	...	...	...	...	12
	Wellington	7	4	...	...	16	2	29	...	...	2	1	...	...	...	...	...	3
TOTAL		1,592	1,604	100	1	884	1,131	5,411	57	23	171	25	17	4	1	...	...	304

- * One faecal carrier of both B. Typhosus and B. Paratyphosus A was recorded.
† One faecal carrier B. Paratyphosus A was also a urinary carrier B. Typhosus.
‡ Four carriers had B. Paratyphosus A in both faeces and urine.
§ Two carriers had B. Paratyphosus B in both faeces and urine and in one of them.
¶ B. Typhosus had been isolated from the blood.
|| One carrier had B. Typhosus in both faeces and urine.
Percentage of carriers to cases (excluding the double infections):
B. Typhosus 5.0% (Faecal 3.6% Urinary 1.4%).
B. Para. A. 12.2% (" 10.7% " " 1.5%).
B. Para. B. 10.5% (" 8.5% " " 2.0%).
All cases admitted to Depots 5.8.

11. *Malaria*.—The admissions and deaths for Malaria during 1923 were 172.2 and 0.27 per 1,000 respectively as compared with 175.4 and 0.27 in 1922.

This disease is still the outstanding cause of admissions to Hospital, and there is no evidence that any real measure of control has been obtained. Comparatively good years give place to bad ones, and these again to better years, the fluctuations being almost entirely unaffected by the feeble preventive measures so far attempted.

To undertake preventive measures with any hope of success, it is essential that the problem should be clearly defined.

Measures based on inaccurate knowledge lead to diffusion of energy and funds without any appreciable effect on the incidence.

The following data are indispensable and should be determined for each station, viz.—

(1) The season of the year at which infection takes place. This can be fairly definitely determined.

(2) The time of day at which infections take place. This is already known—sunset to sunrise, or during the daytime if buildings are dark.

(3) The species of anopheline mosquito that spread the infection. Knowledge on this point is far from complete.

(4) The breeding-places of these 'vector' mosquitos.

(5) The exact place at which the patients acquire the infection. This appears to require very full investigation. The possibilities appear to be :—

(a) In barrack-rooms.

(b) On guard duty.

(c) On detached duty in civil lines, forts, etc.

(d) When visiting bazaars or civil stations, at night.

(e) On journeys to and from hill stations.

It is a fact that Officers do not acquire the infection to the same extent that other ranks do, and the same applies to women and children. This would appear to point to the high incidence amongst other ranks being dependent on some factor or factors that do not apply to the same extent in the case of officers, women and children.

Administrative measures have recently been adopted which, it is hoped, will lead to the collection of accurate data and to a clear definition of the problem to be dealt with. Preventive measures can then be formulated with some prospect of success, and with the hope that the necessary expenditure will produce real results in permanently reducing the incidence of the disease.

In the meantime it may be said that the only *certain* way of preventing malarial infection is by the protection of the individual from mosquito bites. This depends very largely on the individual himself and on his determination—or otherwise—in the matter of ensuring that he is not bitten by mosquitos. This again depends partly on education on the subject of Malaria and partly on disciplinary measures. It is thoroughly established that a person may live with immunity in the midst of intense malarial infection provided he is determined not to be bitten by mosquitos and takes thorough precautions accordingly.

Mosquito nets have now been made the property of the men themselves, but very close supervision is found to be necessary in order to ensure that they are effectively used.

Electric fans used in conjunction with nets are believed to ensure both comfort and protection. Motor driven punkhas without nets are not considered to be effective; such punkhas are often noisy when in use and when they are stopped for any reason the men are left without any protection whatever.

Some measure of protection is obtained by the use of repellents, and P. C. oil is provided and ordered to be used, especially by men on guard or other duties at night.

Instructions have been issued for Antimalarial Committees to be formed in each station, and for an antimalarial officer to be in control of all preventive measures. A special form of monthly report has been drawn up and is now in use.

In certain places, *e.g.*, the Ridge at Jubbulpore, where the problem is fairly clearly defined antimosquito measures have been attended with a considerable measure of success. In other places, *e.g.*, Lahore, Rawalpindi and Peshawar, it does not appear that the energy and money expended have had any appreciable effect on the incidence.

Table B-13 shows the admissions and deaths from Malaria by Commands. The total actual admissions reached the high figure of 10,875.

TABLE B-13.

Malaria.

Admissions and deaths by Commands.

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actual.	Ratio per 1,000.	Actual.	Ratio per 1,000.	
Northern	5,687	348.8	4	0.24	0.1
Western	472	87.6	...	...	...
Eastern	1,779	105.8	4	0.24	0.2
Southern	1,572	84.0	6	0.32	0.4
Burma District	107	53.5	1	0.50	0.9
Waziristan District	1,275	585.2	2	1.00	0.2
Adon Brigade	85	21.3	...	...	...
Wana Column	51	195.4	...	...	...
Troops on the line of march	7	28.5	...	...	...
ALL INDIA	10,875	172.2	17	0.27	0.2

Waziristan with an admission rate of 585.2 per 1,000 still occupies the first place amongst malarious localities, the Northern Command being second with 343.8 per 1,000.

These two together give an admission rate of 464.5 per 1,000, as compared with 82.3 per 1,000 for the rest of India.

Table B-14 gives the six most malarious of the large stations:—

TABLE B-14.

Malaria.

Stations showing highest incidence.

Station.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Lahore	1,271	1077.1	1	0.85
Peshawar	698	479.4	1	0.69
Nowshera	421	385.2	...	...
Delhi	301	283.7	1	0.94
Rawalpindi	701	279.8	...	...
Sialkot	283	227.9	...	...

Lahore heads the list with the very high admission ratio of 1077.1 per 1,000.

The conditions prevailing at Lahore Cantonment remain practically unchanged from the time when it held its evil reputation as "Mian Mir." An exceptionally healthy station for 9 months of the year, Lahore becomes a hot-bed of malarial infection during August, September and October.

During the monsoon, which lasts usually from mid-July to mid-September, *A. rossi* appears in enormous numbers, to be followed by *A. culicifacies* and *A. stephensi* in smaller numbers.

Investigations show that *A. rossi*, although not found infected in-nature, becomes infected as readily as the other two under experimental conditions. Although doubtful as a vector of the malaria parasite, it is under grave suspicion, and instructions have been issued that for the purpose of anti-malarial measures it is to be considered a vector and dealt with accordingly. The malaria in Lahore was part of a severe epidemic which ravaged the Punjab during the autumn of 1923. The 1st Battalion Northamptonshire Regiment became heavily infected, with the inevitable sequence of a very large number of relapses during the present year (1924).

It will be seen that Quetta does not appear in Table B-14 for the year under review, and it appears that the anti-malarial measures carried out in that station have had a certain measure of success in reducing the incidence.

The actual admissions for all India during 1923 were 10,875. These were classified as follows:—

<i>Fresh infections.</i>	4,910 Cases.
Benign Tertian	3,479
Malignant "	886
Quartan	10
Mixed Infections . . . . .	...
Diagnosed clinically	585
TOTAL	4,910

Relapses of old infections.

5,965 Cases.

Benign Tertian	3,950
Malignant "	783
Quartan	8
Mixed infections	20
Diagnosed clinically	1,174
Malaria Cachexia	30
TOTAL	5,965

84 per cent. of the cases were accurately diagnosed by microscopical examination of blood films, the remainder being diagnosed on clinical grounds.

12. *Sandfly Fever*.—The admission rate for Sandfly Fever was 28·6 per 1,000, practically the same as 28·9 per 1,000 in 1922, thus maintaining the improvement as compared with 1921, when the admission rate for this disease was 74·8 per 1,000.

The distribution of cases by Commands is shown in Table B-15 below :—

TABLE B-15.**Sandfly Fever.***Admissions and deaths by Commands.*

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actual.	Ratio per 1,000.	Actual.	Ratio per 1,000.	
Northern	1,126	68·1	...	...	...
Western	15	2·8	...	...	...
Eastern	859	21·4	...	...	...
Southern	89	4·8	...	...	...
Burma District . . . . .	...	...	...	...	...
Waziristan District	96	47·8	...	...	...
Aden Brigade	111	94·5	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march	7	28·5	...	...	...
ALL INDIA	1,803	28·6	...	...	...

Aden Brigade shows the highest admission rate, 94·5 per 1,000, based on 111 actual admissions in a strength of 1,174. This shows a very large increase as compared with 10·2 per 1,000 in 1922.

In India proper the Northern Command is highest with 68.1 admissions per 1,000, as compared with 70.2 in 1922. Waziristan comes next with 47.8 per 1,000 as compared with 44.4 in 1922.

Burma had no cases of Sandfly Fever, while the Western and Southern Commands had a very low incidence, viz., 2.8 and 4.8 per 1,000; respectively.

The prevalence in the Northern Command and Waziristan of diseases due to biting insects is still further emphasized by these statistics of Sandfly Fever.

The stations with highest incidence are shown in Table B-16.

TABLE B-16.

Sandfly Fever.

Stations showing highest incidence.

STATION.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Landi Kotal	716	819.2	...	...
Lucknow	170	73.4	...	...
Aden	111	94.5	...	...
Peshawar	101	69.4	...	...
Multan	62	132.8	...	...
Nowshera	44	40.2	...	...
Byzabad	40	40.8	...	...

Landi Kotal with an admission rate of 819 per 1,000 stands out again as the worst Sandfly Fever station, the actual admissions being 716 in a strength of 874. Multan comes next with 132.8 per 1,000, while Aden is third with 94.5 per 1,000.

No effective preventive measures have yet been devised, the only protection being the use of P. C. (Bamber) oil and electric fans. The application of tar spray to the ground, as also the possibility of growing grass around barracks, are amongst the preventive measures under consideration.

13. *Pyrexia of uncertain origin*.—The admissions under this group were only 37, giving an admission rate of 0·6 per 1,000 as against 0·7 per 1,000 in 1922. One death was reported from Madras.

14. *Dengue*.—The admissions for, and distribution of, Dengue cases are shown in Table B-17.

TABLE B-17.

Dengue.

Admissions and deaths by Commands.

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	5	0·3	...	...	...
Western	19	3·5	...	...	...
Eastern	507	30·2	...	...	...
Southern	338	12·7	...	...	...
Burma District	224	112·0	...	...	...
Waziristan District	1	0·5	...	...	...
Aden Brigade	...	...	...	...	...
Wana Column	...	...	...	...	...
Troops on the line of march	...	...	...	...	...
ALL INDIA	994	15·7	...	...	...

Burma is highest with 112 admissions per 1,000, while the Northern Command is lowest with only 0·3 per 1,000.

The total admission ratio for this disease for all India shows a slight increase being 15·7 per 1,000, as compared with 13·5 in the preceding year.

Table B-18 shows the stations most severely affected.

TABLE B-18.

Dengue.

Stations showing highest incidence.

Station.	Strength.	ADMISSIONS.		DEATHS.	
		Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Fort William	1,065	400	368.7	...	...
Madras	605	159	262.8	...	...
Rangoon	903	102	113.0	...	...
Mandalay	187	74	395.7	...	...
Maymyo	771	43	55.8	...	...
Dinapore	750	31	41.3	...	...
Bombay	827	30	36.3	...	...
Barrackpore	508	27	53.1	...	...
Allahabad	931	27	29.0	...	...
Kamptee	895	26	29.1	...	...

Mandalay had the highest incidence, *viz.*, 395.7 per 1,000 as against 54.8 per 1,000 in 1922. Calcutta comes next with 368.7 per 1,000, while Madras and Rangoon had 262.8 and 113.0 per 1,000, respectively.

The distribution points to strictly local conditions being responsible, which corresponds with the known domestic habits of the mosquito vector *Aedes calopus*. The importance of anti-mosquito measures is still further emphasized by the statistics of this disease.

15. *Scarlet Fever*.—There were 10 admissions during the year, giving an admission ratio of 0.2 per 1,000, as compared with 9 admissions and a ratio of 0.1 per 1,000 in 1922. No deaths occurred from this disease.

16. *Diphtheria*.—There were 69 admissions and 3 deaths from Diphtheria in 1923 as against 70 cases and 2 deaths in 1922.

Table B-19 gives the distribution by Commands, while Table B-20 gives a list of the stations showing the highest incidence.

TABLE B-19.

Diphtheria.

Distribution by Commands.

Command.	ADMISSIONS.		DEATHS		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	25	1.5	...	...	...
Western	4	0.7	...	...	...
Eastern	2	0.1	...	...	...
Southern	34	1.8	2	0.11	5.9
Burma District	1	0.5	...	...	...
Waziristan District	3	1.5	1	0.50	33.3
Aden Brigade . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march	...	...	...	...	...
ALL INDIA	69	1.1	3	0.05	4.8

TABLE B-20.

Diphtheria.

Stations showing highest incidence.

Station.	Strength.	ADMISSIONS.		DEATHS.	
		Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Bangalore	2,015	23	10.8	...	...
Peshawar	1,456	16	11.0	...	...
Kanpotee	895	6	6.7	...	...
Karachi	1,286	4	3.1	...	...
Ambala	751	3	4.0	...	...
Dera Ismail Khan	189	3	15.9	1	5.29
Wellington	911	3	3.3	...	...

The 3 deaths were at Poonā (a transfer from Kirkeo), Secunderabad, and Dem Ismail Khan—one each.

Bangalore had the largest number of cases, viz., 22.

Exhaustive enquiries were carried out, and one waiter in the Y. M. C. A. and three wives of British other ranks were found to be carriers.

17. *Measles*.—There were 14 cases and no deaths during the year, as against 12 cases and no deaths in 1922. The cases were scattered over 10 stations.

18. *Cerebro-Spinal Fever*.—There were no cases and no deaths during the year, as compared with 3 cases and 2 deaths in 1922.

19. *Heat-stroke*.—The admissions and deaths for Heat-stroke are shown in Table B-21, along with comparative figures for the quinquennial periods 1910-1914 and 1915-1919 and the years 1918 to 1921.

TABLE B-21.

Heat-stroke.

Admissions and deaths.

Years.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14 (Average) . . . . .	...	1.2	...	0.22
1915-19 (Average) . . . . .	...	6.0	...	0.69
1918	911	14.0	97	1.10
1919	416	7.4	42	0.74
1920	352	6.1	75	1.31
1921	219	3.7	67	1.14
1922	202	3.4	22	0.7
1923	397	6.3	33	0.92

397 cases occurred during the year, giving an admission ratio of 6.3 per 1,000, against 202 and 3.4 per 1,000 in 1922.

TABLE B-22.

Heat-stroke (including Heat exhaustion and Sun-stroke.)

Admissions and deaths by Commands (1923.)

Commands.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	82	1.9	9	0.54	28.1
Western	4	0.7	...	...	..
Eastern	229	13.6	15	0.89	6.5
Southern	100	5.9	8	0.43	8.0
Burma District	1	0.5	...	...	...
Waziristan District	26	12.9	1	0.50	3.8
Aden Brigade	1	0.2	...	...	...
Wana Column	....	...	...	...	...
Troops on the line of march	4	16.3	...	...	...
ALL INDIA	397	6.3	39	0.52	8.3

Of actual cases the largest number was in the Eastern Command, *viz.*, 229, followed by the Southern Command with 100 cases.

20. *Pulmonary Tuberculosis.*—There were 70 admissions and 8 deaths from this disease in 1923 as against 51 admissions and 9 deaths in 1922.

The comparative admission and death ratios for the quinquennial periods 1910-14 and 1915-19 and for the years 1919 to 1923 are given in Table B-23.

TABLE B-23.

Pulmonary Tuberculosis.

Admissions and deaths by years.

	Admission ratio per 1,000.	Death ratio per 1,000.
1910-14 (Average)	1.1	0.16
1915-19 (Average)	1.6	0.17
1919	1.5	0.18
1920	1.4	0.16
1921	1.1	0.14
1922	0.8	0.15
1923	1.1	0.13

The distribution by Commands is shown in Table B-24.

TABLE B-24.
Pulmonary Tuberculosis.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	21	1·8	3	0·18	14·8
Western	8	0·6	...	...	...
Eastern	21	1·2	2	0·12	9·5
Southern	20	1·1	3	0·16	15·0
Burma District	2	1·0	...	...	...
Waziristan District	2	1·0	...	...	...
Aden Brigade	1	0·9	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march.	...	...	...	...	...
ALL INDIA	70	1·1	6	0·13	11·4

21. *Lobar Pneumonia.*—The admissions and deaths from lobar pneumonia are shown in Table B-25, along with comparative figures for the quinquennial period 1910-14 and 1915-19 and the years 1920-23.

TABLE B-25.
Lobar Pneumonia.
Admissions and Deaths.

	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14 (Average) . . . . .	...	2·4	...	0·26
1915-19 (Average) . . . . .	...	3·8	...	0·56
1920	251	4·4	40	0·70
1921	236	4·0	31	0·53
1922	191	3·2	24	0·40
1923	196	3·1	12	0·19

It will be seen that the improvement since the War is well maintained and progressive. In no case was the disease present in epidemic form. The distribution by Commands is shown in Table B.-26.

TABLE B-26.

Lobar Pneumonia.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	71	4.3	6	0.86	8.5
Western	13	2.4	1	0.19	7.7
Eastern	54	3.2	3	0.18	5.6
Southern	44	2.4	1	0.05	2.3
Burma District	2	1.0	...	...	...
Waziristan District	9	4.5	1	0.50	11.1
Adon Brigade	3	2.6	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of March.	...	...	...	...	...
ALL INDIA	196	3.1	12	0.19	6.1

The stations showing the largest number of cases are shown in order in Table B.-27.

TABLE B-27.

Lobar Pneumonia.

Stations showing highest incidence.

Stations.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Ferozepore	12	13.8	2	2.22
Bareilly	11	11.6	...	...
Rawalpindi	10	4.0	...	...
Jubbulpore	8	4.4	...	...
Newshera	7	6.4	...	...
Meerut	7	3.3	...	...
Bangalore	7	3.4	...	...

22. *Other Respiratory Diseases.*—There were 1,179 admissions under this group, (as against 1,231 in the preceding year) including :—

Bronchitis	918
Pleurisy	114
Lobular pneumonia	45
Laryngitis	40

There were 7 deaths during the year (as against 13 in 1922) viz. :—

Lobular pneumonia	6
Asthma	1

The admission and death ratios both show a satisfactory decrease, viz., 18.7 and 0.11 per 1,000 as against 20.5 and 0.22 per 1,000 in 1922.

The distribution by Commands and Stations is given in Tables B-28 and B-29.

TABLE B-28.

Other Respiratory Diseases.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	288	17.4	2	0.12	0.7
Western	116	21.5	..	..	..
Eastern	411	24.4	3	0.18	0.7
Southern	254	18.6	1	0.05	0.4
Burma District	38	19.0	..	..	..
Waziristan „	59	29.4	1	0.80	1.7
Aden Brigade	10	8.5	..	..	..
Wana Column	2	7.7	..	..	..
Troops on the line of march	1	4.1	..	..	..
ALL INDIA	1,179	18.7	7	0.11	0.6

TABLE B-29.

Other Respiratory Diseases.

Stations showing highest incidence.

Stations.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Rawalpindi	70	27.9	...	...
Cawnpore	68	93.3	1	1.37
Quetta	61	23.5	...	...
Calcutta	52	47.9	...	...
Bangalore	37	18.1	...	...
Meerut	36	17.2	1	0.48
Ranikhet	35	29.5	1	0.84
Lucknow	34	14.7	...	...
Bombay	30	36.3	...	...

23. *Dysentery, Colitis and Diarrhoea.*—This group accounted for 1,568 admissions and 8 deaths during the year, as against 1,377 admissions and 6 deaths in the preceding year. The admission and death ratio per 1,000 were 24.8 and 0.13 respectively as compared with 22.9 and 0.10 in 1922.

The admissions and deaths for this group of diseases are given in Table B-30, while comparative statistics are given in Table B-31.

TABLE B-30.

Dysentery, Colitis and Diarrhoea.

Admissions and Deaths, with their corresponding ratios per 1,000 of strength (1923).

	Dysentery.	Colitis.	Diarrhoea.	Total for Group.
Actual admissions	631	222	515	1,568
Ratio per 1,000	13.2	3.5	8.2	24.8
Actual deaths	8	...	...	8
Ratio per 1,000	0.13	...	...	0.13

TABLE B-31.

Dysentery, Colitis and Diarrhoea.

Admission and death ratios per 1,000 of strength by years.

Period.	Dysentery.		Colitis.		Diarrhoea.		Total for Group.	
	A.	D.	A.	D.	A.	D.	A.	D.
1910-14	6.5	0.19	4.9	0.03	21.9	—	33.3	0.22
1915-19	11.1	0.27	12.1	0.08	26.5	—	49.7	0.35
1920	10.1	0.16	6.3	0.02	32.5	—	48.9	0.18
1921	12.1	0.15	4.1	—	26.2	—	42.4	0.15
1922	9.5	0.08	2.5	0.02	10.8	—	22.9	0.10
1923	13.2	0.13	3.5	—	8.2	—	24.8	0.13

Of the total number of cases in this group, 831 were of "Dysentery," as compared with 573 in 1922, pointing to greater accuracy in diagnosis.

The distribution of these cases by Commands is shown in Table B-32.

TABLE B-32.

Dysentery.

Command.	Amoebic.	Bacillary.	Dysentery Group.	Total.
Northern	115	5	16	136
Western	131	1	1	133
Eastern	166	9	15	190
Southern	300	6	12	318
Burma District	13	...	2	15
Waziristan ,,	22	2	9	33
Aden Brigade	3	...	2	5
Wana Column . . . . .	...	...	...	...
Troops on the line of march	1	...	...	1
ALL INDIA	751	23	57	831

This table shows very clearly that the great bulk of the dysentery in the army in India is amœbic dysentery, the spread of which is believed to be largely due to flies, a protozoan parasite carried by an insect. This emphasizes once more the importance of protozoology and entomology in the prevention of disease in India and of the necessity for a good working knowledge of these subjects on the part of all officers of the military medical services.

Table B-33 shows the distribution by Commands.

TABLE B-33.

Dysentery, Colitis and Diarrhoea.

Admissions and deaths by Commands (1923).

COMMANDS.	DYSENTERY.				COLITIS.				DIARRHOEA.				TOTAL OF GROUP.			
	ADMIS- SIONS.		DEATHS.		ADMIS- SIONS.		DEATHS.		ADMIS- SIONS.		DEATHS.		ADMIS- SIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Northern	136	8.2	4	0.24	67	4.0	...	...	76	4.6	...	...	279	16.9	4	0.24
Western	133	24.7	...	...	36	6.7	...	...	33	6.1	...	...	202	37.5	...	...
Eastern	190	11.3	1	0.06	47	2.8	...	...	178	10.6	...	...	415	24.7	1	0.06
Southern	318	17.0	3	0.16	37	2.0	...	...	115	6.1	...	...	470	25.1	3	0.16
Burma District	15	7.5	...	...	3	1.5	...	...	38	19.0	...	...	56	23.0	...	...
Waziristan District	33	16.4	...	...	19	9.5	...	...	58	28.9	...	...	110	34.8	...	...
Aden Brigade	5	4.3	...	...	8	6.8	...	...	7	6.0	...	...	20	17.0	...	...
Wana Column . . . . .	...	...	...	...	3	11.5	...	...	1	3.8	...	...	4	15.3	...	...
Troops on the line of march	1	4.1	...	...	2	8.1	...	...	9	36.8	...	...	12	43.8	...	...
ALL INDIA	331	13.2	8	0.13	222	3.5	...	...	515	8.2	...	...	1,508	24.8	8	0.13

24. *Veneral Disease.*—The admission ratio decreased from 84.7 in 1922 to 71.3 in 1923, the fourth successive year showing a decrease.

The main causes for this general decrease may be summarised:—

- (1) Increased efficiency and use of Prophylactic Treatment Rooms.
- (2) Improved education of all ranks as regards knowledge of venereal diseases and the dangers of alcohol.
- (3) Other prophylactic measures; *e.g.*, the use of preventive packets.

Certain units show consistent low incidences, and this in great part undoubtedly is due to the greater interest taken by the officers in their men, better institutes, regimen'al

clubs, etc., which tend to keep the men in barracks and away from bazaars, and also the fostering of a strong sense of "Esprit de corps."

There is still much room for improvement in the way of rendering barracks and lines more attractive to the men, so that they spend their off duty time there rather than in bazaars, etc.

The monthly admission ratios per 1,000 of strength during 1922 and 1923 were :—

	1922.	1923.		1922.	1923.
January	8.6	8.0	July	6.4	6.0
February	7.8	4.9	August	6.8	5.6
March	8.3	7.2	September	6.2	4.9
April	8.2	6.7	October	7.1	5.9
May	6.4	7.0	November	7.4	5.1
June	5.9	5.8	December	7.3	5.5

Table showing the number of admissions to hospital for Fresh and Relapse Cases of Venereal Diseases, and the ratio per 1,000 of strength during 1922 and 1923.

	FRESH.				RELAPSE.				TOTAL.			
	Admissions.		Ratio per 1,000.		Admissions.		Ratio per 1,000.		Admissions.		Ratio per 1,000.	
	1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.	1922.	1923.
Syphilis	605	593	11.6	9.4	130	85	2.3	1.3	825	678	13.7	10.7
Soft Chancre	924	732	15.4	11.6	63	30	1.0	0.5	987	763	16.4	12.1
Gonorrhoea	2,358	2,163	39.2	34.3	920	901	15.4	14.3	3,287	3,064	54.7	48.6
TOTAL	3,977	3,488	66.1	55.2	1,122	1,016	18.0	16.1	5,099	4,504	84.7	71.3

There has been again a reduction in the number of fresh infections, and also in the number of relapse cases, the latter being due to more thorough treatment and to some extent to a higher-standard of cure.

The average stay in hospital for each case of Venereal Disease decreased from 44 days in 1922 to 42 days in 1923, giving a total of days lost of 189, 168 as against 224, 356 in 1922.

The average stay in hospital by diseases was :—Syphilis 35 days, Soft Chancre 35 days, Gonorrhoea 45 days.

Bombay and Waziristan Districts are the only two giving an increased incidence, the former of 46.3 and the latter 4.2.

Of the arms of the Service, the Royal Artillery gives the highest incidence with 78·4, while with the exception of the Royal Engineers (increase of 1·1) and the Royal Tank Corps (increase of 3·5), all arms show decreased incidences.

It is of interest to note the percentage incidences of Syphilis, Soft Chancre and Gonorrhœa to each other among British troops, and their comparison with those of Indian troops.

Table showing percentage incidence to each other of Syphilis, Soft Chancre and Gonorrhœa among British and Indian troops for the years 1921, 1922 and 1923.

Year.	BRITISH.			INDIAN.		
	Syphilis.	Soft Chancre.	Gonorrhœa.	Syphilis.	Soft Chancre.	Gonorrhœa.
1921 . . .	19·03	19·71	61·26	33·03	30·47	36·50
1922 . . .	16·18	19·36	64·46	35·43	28·89	35·69
1923 . . .	15·05	16·92	68·03	38·08	23·78	38·14

The proportion of Syphilis to Gonorrhœa was approximately as follows :—

British Troops—

1921	1—3
1922	1—4
1923	1—5

Indian Troops—

1921	1—1·1
1922	1—0·9
1923	1—1·0

It would be unwise to make any definite statement as to what part the use and non-use of Prophylactic Treatment Rooms has played in the production of these relative incidences, but it is of importance to note that among Indian troops there is little or no use made of the Prophylactic Treatment Rooms.

In Europe the ratio of Syphilis to Gonorrhœa is usually taken as being 1 to 3 or 4, so that it might be argued that the British ratios given above are normal. It should be noted, however, that the ratio of Syphilis to Gonorrhœa has shown a yearly decrease since 1921, the date of the better organisation, equipping, and more general use of Prophylactic Treatment Rooms. Again, if the ratio of Syphilis to Gonorrhœa among Indian troops (1 to 1·0) be taken as the normal ratio of these diseases in India, then it is permissible to deduce that there is some factor operating among the British but not among the Indian troops, which should account for the striking difference in the ratios.

For the 3 years, 1911, 1912, 1913 (the best three consecutive years for lowest venereal disease rates in the British troops in India from 1861 to 1914) the average ratio of Syphilis to Gonorrhœa in British troops was, 1 to 2·0, while that of Indian troops for the same period was, 1 to 1·4.

For the 3 years, 1894, 1895, 1896 (the 3 worst years) the British average ratio was 1 to 0.75 (nearly), and that for the Indian troops was 1 to 0.64.

It is evident from these figures that the ratio of Syphilis to Gonorrhoea in India is not the same as that of Europe, but approaches the 1 to 1 ratio.

That the incidence of Venereal Disease among the civilian population is in places very high cannot be disputed, and it is needless to expect low incidences of these diseases among soldiers in areas where there is a high incidence amongst civilians, for which little or nothing in the way of modern treatment is possible or is being attempted.

The following examinations were carried out at the Central Dermatological Laboratory, Poona, during 1923—

Wassermann Tests	16,833
Sachs Georgi Tests	1,714
Dreyer Ward Tests	9
Microscopical Examinations	517
TOTAL	19,073

This Laboratory carries out all the Wassermann tests and any researches in venereology for both the British and Indian Armies in India, as well as forming a centre for research and instruction in everything pertaining to the modern investigation and control of venereal diseases.

In conjunction with the Venereal Section of the British Station Hospital, Poona, which adjoins the Laboratory, it functions as a teaching centre for junior officers of the Royal Army Medical Corps and Indian Medical Service and for Assistant and Sub-Assistant Surgeons.

TABLE B.-34.

Venereal Disease.

Admission ratios for all forms of venereal disease for the years 1920 to 1923 and the quinquennial period 1915-1919. New infections and relapse cases were not recorded separately until 1921.

Year.	Average annual strength.	TOTAL ADMISSIONS NEW INFECTIONS.		TOTAL ADMISSIONS RELAPSE CASES OR OLD INFECTIONS.		TOTAL ADMISSIONS ALL FORMS OF VENEREAL DISEASE.	
		Actual.	Ratio per 1,000 of strength.	Actual.	Ratio per 1,000 of strength.	Actual.	Ratio per 1,000 of strength.
1915-1919 (Average)	66,199	...	...	...	...	3,640	55.0*
1920	57,332	...	...	...	...	6,775	118.3
1921	58,681	5,004	85.2	1,475	25.2	6,479	110.4
1922	60,166	3,977	66.1	1,122	18.6	5,099	84.7
1923	63,139	3,483	55.2	1,010	16.1	4,504	71.3

* Worked out on quinquennial aggregates.

TABLE B-35.

Venereal Disease.

Admission ratio per 1,000 of strength by Commands.

	1920.	1921.	1922.	1923.
Northern Command	63.6	83.4	61.3	56.8
Western "	140.6	102.6	94.0	71.7
Eastern "	124.4	106.0	90.5	72.3
Southern "	153.7	136.7	97.8	86.2
Burma District	261.9	205.8	143.8	113.5
Waziristan District	42.1	35.1	33.3	35.4
Aden Brigade . . . . .	...	...	57.5	34.1
Troops on the line of march	12.6	34.7	52.2	24.4
ALL INDIA	118.2	110.4	84.7	71.8

TABLE B-36.

Venereal Disease.

Stations with average strength of over 1,000 and the garrisoned Ports of India furnishing the highest admission ratios during 1921, 1922 and 1923.

Stations.	1921.		Stations.	1922.		Stations.	1923.	
	Average annual strength.	Admn. ratio per 1,000.		Average annual strength.	Admn. ratio per 1,000.		Average annual strength.	Admn. ratio per 1,000.
Bombay	1,132	221.7	Calcutta	1,231	203.9	Calcutta	1,085	183.4
Bangalore	1,879	188.4	Bangalore	1,742	131.5	Lahore	1,180	141.5
Deolali	1,828	182.2	Rawalpindi	2,151	125.1	Bangalore	2,045	124.2
Karachi	1,007	150.9	Karachi	1,235	115.8	Karachi	1,236	105.8
Poona	2,138	134.7	Poona	2,156	118.6	Rawalpindi	2,505	91.4
Secunderabad	2,649	184.4	Delhi	1,290	107.0	Delhi	1,061	83.9

TABLE B-37.

Venereal Disease.

Admission ratio per 1,000 of strength by Arms of the Service.

	1920.	1921.	1922.	1923.
Cavalry	54.9	75.2	76.0	56.2
Artillery	121.8	103.1	85.8	78.4
Infantry	129.5	125.1	94.0	77.2

TABLE B-38.

Venereal Disease.

Years.	INVALIDS-SENT TO THE UNITED KINGDOM.						DEATHS.	
	SYPHILIS.		SOFT CHANCER.		GONORRHEA.		Actuals.	Ratio per 1,000.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.		
1920	7	0.12	3	0.05	1	0.02	4	0.07
1921	1	0.02	...	...	3	0.05	1	0.02
1922	6	0.10	...	...	1	0.02	1	0.01
1923	4	0.06	...	...	5	0.08	2	0.03

The full detailed statistics of the various forms of diseases, statistics by Districts, Units, etc., are published in the "General Report and Statistics of Venereal Diseases amongst British Troops in India" each year.

25. *Beri-Beri.*—There were no cases of beri-beri during the year.

26. *C.—Invaliding.*—The number of men invalided during the year was 979 as against 714 in the preceding year, and 749 in 1921, the corresponding ratios per 1,000 of strength being 15.51, 11.87 and 12.37.

The chief causes are shown in Table C-1, which also gives the figures for 1914, 1921 and 1922.

TABLE C-1.
Invaliding by Causes.

Disease.	ACTUAL NUMBERS INVALIDED.			
	1914.	1921.	1922.	1923.
Dysentery	3	18	15	9
Enterica . . . . .	...	3	7	8
• Rheumatic Fever, Gout and Osteo-Arthritis	5	11	11	12
Pulmonary Tuberculosis	27	41	48	54
Malaria	5	35	50	28
Syphilis	7	1	6	4
Gonorrhœa	12	3	1	5
Diseases of the Nervous system other than Epilepsy and Mental.	14	40	38	46
Epilepsy	80	24	36	30
Insanity	34	63	29	34
Diseases of the Eye	10	76	67	135
Diseases of the Ear	60	74	74	129
V. D. H. and D. A. H.	55	103	72	110
Diseases of the Circulatory System other than V. D. H., D. A. H. and Varix.	9	9	11	16
Varix . . . . .	...	6	2	6
Diseases of the Respiratory System	4	25	33	37
Caries of the Teeth	1	...	2	2
Hernia	1	1	2	4
Diseases of the Liver	18	16	8	7
Diseases of the Digestive System other than Hepatitis, Abscess of the liver, Hernia and Caries of the Teeth.	7	19	11	21
Local Injuries	25	65	63	85
All Causes	64	749	714	979
Ratio per 1,000	60.1	12.76	11.87	13.51

27. *D.—Officers, Women and Children.*—(a) The main statistics regarding Officers of the British Army are given in Table D-1.

TABLE D-1.

Health Statistics of Officers of British Units by years.

	1920.	1921.	1922.	1923.
Average strength	3,136	3,122	3,078	2,788
Actual admissions	2,564	2,303	1,882	1,665
Ratio per 1,000	817.6	737.7	611.4	597.2
Actual deaths	24	25	17	15
Ratio per 1,000	7.65	8.01	5.52	5.38

(b) The chief causes of sickness amongst officers are shown in Table D-2.

TABLE D-2.

Admission Ratios per 1,000 for Officers by Chief Diseases.

Dysentery	17.9	Bronchitis	27.6	Cellulitis	31.2
Dengue	25.5	Tonsillitis	29.4	Myalgia	14.0
Sandfly Fever	27.6	Diarrhoea	17.2	Contusion	17.2
Malaria	106.9	Jaundice	18.7	Fractures	18.6

(c) The health statistics of officers and of other ranks for the quinquennial periods 1910-14 and 1915-19 and for the years 1920 to 1923 are compared in Table D-3.

TABLE D-3.

Health Statistics of Officers and Other Ranks by years.

(Ratios are per 1,000 of strength.)

Period.	ADMISSIONS.		INVALIDS SENT HOME.		DEATHS.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
1910-14	567.5	567.2	16.30	7.03	5.14	4.36
1915-19	1,053.0	881.7	60.98	29.91	10.54	8.81
1920	817.6	1,071.5	25.51	40.36	7.65	6.72
1921	787.7	1,031.3	17.62	12.76	8.01	6.95
1922	611.4	628.9	21.12	11.67	5.52	4.72
1923	597.2	595.4	20.44	15.51	5.38	3.75

(d) The comparative incidence of the enteric group of fevers amongst officers, women and children and other ranks during the year 1923 is shown in Table D-4.

TABLE D-4.

Incidence of the Enteric Group of Fevers (1923).

	OFFICERS.		WOMEN.		CHILDREN.		OTHER RANKS.	
	A.	D.	A.	D.	A.	D.	A.	D.
Actuals	19	...	19	2	16	2	144	12
Ratio per 1,000	6.8	...	3.3	0.35	2.0	0.25	2.3	0.19

(e) The causes of death and invaliding amongst officers, with the actual number of casualties due to each are shown in Table D-5.

TABLE D-5.

Deaths and Invaliding.—Officers (1923).

Disease.	INVALIDED.		DIED.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Diphtheria . . . . .	...	...	1	0.36
Dysentery, Protozoal	3	1.08	...	...
Dysentery, Group	1	0.36	...	...
Malaria	3	1.08	...	...
Rheumatic Fever	1	0.36	...	...
Small-pox . . . . .	...	...	1	0.36
Tuberculosis (undefined)	1	0.36	...	...
Syphilis	1	0.36	...	...
Neuritis multiple	1	0.36	...	...
Neuralgia	1	0.36	...	...
Epilepsy	2	0.72	...	...
Vertigo	2	0.72	...	...
Neurasthenia	6	2.15	...	...
Apoplexy . . . . .	...	...	1	0.36
Diseases of the heart valves	1	0.36	1	0.36
Disordered action of the heart	2	0.72	1	0.36
Dilatation of the heart	1	0.36	...	...
Anæmia primary	2	0.72	...	...
Lobar pneumonia	2	0.72	2	0.72
Lobular pneumonia	1	0.36	1	0.36
Pulmonary tuberculosis	4	1.43	...	...
Pleurisy	2	0.72	...	...
Indigestion	1	0.36	...	...
Fistula in ano	1	0.36	...	...
Hepatitis	1	0.36	...	...
Diabetes insipidus . . . . .	...	...	1	0.36
Rheumatoid arthritis	1	0.36	...	...
Cellulitis	1	0.36	...	...
Pyelonephritis	1	0.36	...	...
Calculus in kidney	1	0.36	...	...
Effects of heat	1	0.36	...	...
Suffocation by drowning	1	0.36	...	...
Frost-bite . . . . .	...	...	1	0.36
Wounds Gun-shot	1	0.36	...	...
Concussion	1	0.36	5	1.79
Fractures	3	1.08	...	...
Adenoma	5	1.79	...	...
Alcohol	1	0.36	...	...
	1	0.36	...	...
TOTAL	57	20.44	15	5.38

(f) The main health statistics for women during 1923 are given in Table D-6 with the corresponding figures for 1920, 1921 and 1922.

TABLE D-6.
Main Health Statistics for Women.

	1920.	1921.	1922.	1923.
Average strength	2,749	5,737	6,152	5,762
Actual admissions	2,077	2,515	2,440	2,569
Ratio per 1,000	554.0	438.4	404.7	445.9
Actual deaths	44	46	39	30
Ratio per 1,000	11.74	8.02	6.34	5.21

(g) In Table D-7 are shown the chief causes of sickness amongst women, with the actual number of admissions to Hospital from each cause.

TABLE D-7.
Chief Causes of Sickness amongst Women (1923).

Disease.	Actual admissions.	Ratio per 1,000.
Dysentery	53	9.2
Dengue	113	19.6
Malaria	278	48.2
Cellulitis	43	7.5
Anaemia	139	24.1
Bronchitis	100	17.4
Tonsillitis	99	17.2
Gastritis	88	15.3
Indigestion	68	11.8
Appendicitis	32	5.6
Diarrhoea	100	17.4
Constipation	56	9.7
Colic	34	5.9
Endometritis	53	9.2
Cramp and Spurious labour pains	38	6.6
Abortiou	147	25.5
Myalgia	66	11.4
N. A. D.	171	29.7

(k) The admission and death ratio per 1,000 for all causes amongst the women for the quinquennial periods 1910-14 and 1915-19 and for the years 1915 to 1923 inclusive are shown in Table D-8.

TABLE D-8.

Admission and death Ratios for all Causes (1923).

(Ratios are per 1,000 of strength.)

Period.	Admissions.	Deaths.
1910-14 (Average)	505.3	7.09
1915-19 (Average)	499.0	11.31
1920	554.0	11.74
1921	438.4	8.02
1922	404.7	6.84
1923	445.9	5.21

(l) The main health statistics for children during 1923 are given in Table D-9 with comparative figures for the three previous years.

TABLE D-9.

Main Health Statistics for Children.

Period.	1920.	1921.	1922.	1923.
Average strength	4,532	6,809	7,518	7,845
Actual admissions	1,767	2,290	2,186	2,471
Ratio per 1,000	336.3	389.9	284.1	315.0
Actual deaths	201	168	150	134
Ratio per 1,000	29.52	37.07	19.95	17.08

(j) In Table D-10 are shown the chief causes of sickness amongst children during 1923 with the admission and death ratios due to each; the corresponding figures for 1920, 1921 and 1922 are also tabulated for comparison.

TABLE D-10.

Main causes of sickness and deaths amongst children by years.

(Ratios are per 1,000 of strength.)

Years.	Measles.		Bronchitis.		Malaria.		Diarrhoea.		Gastritis.		Enteritis.	
	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1920	20.7	0.22	26.3	1.32	43.2	0.66	36.6	4.19	12.8	0.44	18.1	7.50
1921	12.8	...	27.8	0.59	50.1	0.88	21.3	3.52	5.0	0.29	22.8	7.78
1922	3.6	..	37.0	0.40	35.8	0.40	28.9	0.67	3.9	0.40	13.6	3.99
1923	14.3	...	32.6	0.51	32.8	0.25	28.7	0.76	5.1	0.38	21.9	4.21

(k) The total mortality amongst children by age periods for the quinquennial periods 1910-14 and 1915-19, and years 1920 to 1923 inclusive, is shown in Table D-11.

TABLE D-11.

Total mortality (ratios per 1,000) amongst children by age periods.

Years.	Under six months.	Between six and 12 months.	From 1 to 5 years.
1910-14 (Average)	127.9	55.3	14.6
1915-19 (Average)	82.3	31.9	11.4
1920	158.1	68.7	15.3
1921	143.3	49.8	15.6
1922	85.3	42.9	9.2
1923	57.2	42.5	11.4

(7) The different causes of death and invaliding amongst children, with the actual number of casualties due to each, in 1923 are shown in Table D-12.

TABLE D-12.
Deaths and Invaliding—Children (1923).

Disease.	NUMBER INVALIDED.		NUMBER DIED.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Diphtheria . . . . .	...	...	5	0·64
Dysentery . . . . .	...	...	8	1·02
Enteric . . . . .	...	...	2	0·25
Malaria	3	0·38	2	0·25
Rabies . . . . .	...	...	1	0·13
Rubella	1	0·13	...	...
Small-pox . . . . .	...	...	1	0·13
Whooping-cough . . . . .	...	...	1	0·13
Syphilis . . . . .	...	...	2	0·25
Gonorrhœa	1	0·13	...	...
Meningitis (cerebral) . . . . .	...	...	4	0·51
Hydrocephalus . . . . .	...	...	1	0·13
Paralysis	1	0·13	...	...
Neuraesthesia	1	0·13	...	...
Dumbness	1	0·13	...	...
Convulsions (infantile) . . . . .	...	...	6	0·76
Pericarditis . . . . .	...	...	1	0·13
Endocarditis . . . . .	...	...	1	0·13
Retinitis	1	0·13	...	...
Purpura . . . . .	...	...	1	0·13
Bronchitis . . . . .	...	...	4	0·51
Lobar pneumonia . . . . .	...	...	5	0·64
Lobular pneumonia . . . . .	...	...	11	1·40
Pulmonary tuberculosis . . . . .	...	...	1	0·13

TABLE D-12—*contd.*

Deaths and Invaliding—Children (1923).

Disease.	NUMBER INVALIDED.		NUMBER DIED.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Disorders of dentition	1	0·13
Gastritis	3	0·38
Enteritis	33	4·21
Appendicitis	1	0·13
Colitis	4	0·51
Intussusception	1	0·13
Diarrhœa	6	0·76
Intestinal stasis	2	0·25
Peritonitis (tuberculous)	1	0·13
Tubercle of intestines	1	0·13
Iuauition	1	0·13	5	0·64
Rickets	1	0·13
Still-birth	1	0·13
Asphyxia of child	1	0·13
Premature birth	10	1·27
Effects of heat	1	0·13
Heatstroke	1	0·13
Burns and scalds	1	0·13
Sprain	1	0·13
Imperforate rectum	1	0·13
Congenital malformation	1	0·13
N. A. D.	1	0·13	...	...
TOTAL	11	1·40	134	17·08

SECTION II.

Indian Troops of the Army in India.

(From the Director, Medical Services in India.)

A.—GENERAL.

28. Table A-1 gives the average strength of Indian Troops (exclusive of those in China) and the main statistical facts regarding their health during 1923, with comparative figures for the quinquennial periods 1910-14 and 1915-19 and the years 1920 to 1923 inclusive :—

• TABLE A-1.

Main Health Statistics by years.

Period.	Average strength.	Admissions.	Deaths.	Invalids.	Average constantly sick.	RATIO PER 1,000 OF STRENGTH.				Average period of illness of each soldier calculated on average strength.	Average duration of each case of sickness.
						Admissions.	Deaths.	Invalids.	Average constantly sick.		
1910-14 (Average)	130,261	71,213	573	699	2,662	544.6	4.39	5.4	20.7	7.31	13.50
1915-19 (Average)	204,298	161,028	3,435	4,924	7,792	788.2	16.81	23.6	38.1	13.92	17.66
1920	216,445	164,987	2,124	4,564	9,265	762.3	9.81	21.1	42.8	15.62	20.50
1921	175,384	119,215	1,782	3,638	6,031	679.7	10.16	20.7	34.4	12.55	18.47
1922*	147,840	77,408	1,014	2,659	3,639	524.0	6.86	18.0	24.6	8.98	17.15
1923*	143,234	66,847	856	2,328	2,955	466.7	5.98	16.3	20.63	7.53	16.13

* The figures for stations outside India, i.e., Aden and Bushire have been included.

The bad effects of the War on the health of the troops have now passed away and the admission ratio for 1923 was only 466.7 per 1,000 being a decrease of 57.3 per 1,000 as compared with 1922 and constituting a record.

The ratio of average constantly sick is also a record, being 20.63 per 1,000 as compared with 24.6 per 1,000 in 1922 and 20.7 per 1,000 in the quinquennial period 1910-14.

The ratios per 1,000 for deaths and invaliding were 5.98 and 16.3, respectively, as compared with 6.86 and 18.0 in 1922.

It is difficult to resist the conclusion that this marked improvement in the health statistics of the Indian Army is due to the introduction of the Station Hospital system in 1918 and to its growing efficiency.

29. Table A-2 gives the admission ratios for the chief diseases by years.

Table A-3 gives the death ratios for the chief diseases by years. It will be seen that the improvement is a general one, and that the admissions and deaths for practically all diseases are reduced as compared with the previous years.

TABLE A-2.

Admission ratios for the chief diseases by years (Ratios are per 1,000 of average strength).

Period.	Influenza.	Cholera.	Small-pox.	Enteric Group of fevers	Malaria.	Sandy fever.	Pyrexia of uncertain origin	Plague.	Circulatory Diseases.	Pulmonary tuberculosis.	Lobar pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic abscess.	Hepatic congestion and inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All causes.
1910-14 (Average)	2.4	0.3	0.4	2.0	113.3	8.2	34.9	0.3	1.8	2.1	7.7	27.1	18.4	11.7	0.1	1.0	0.8	11.3	14.8	544.6
1915-19 (Average)	54.5	0.5	0.8	1.2	155.4	11.3	7.2	0.4	3.6	3.0	17.3	50.5	15.4	18.8	0.1	1.0	1.1	17.3	49.9	788.2
1920	25.3	0.1	0.7	0.6	208.5	21.5	1.4	0.1	5.1	4.3	11.7	53.6	6.1	14.9	0.1	1.0	0.5	11.4	60.5	762.3
1921	14.4	0.9	0.4	0.7	223.7	24.1	1.2	0.1	4.0	3.8	10.6	42.6	13.7	20.5	0.1	0.6	0.9	6.8	42.7	679.7
1922	5.6	0.1	0.1	0.7	173.9	14.3	0.2	0.1	2.0	3.7	9.3	36.4	8.5	15.7	0.1	0.6	0.4	4.3	32.7	524.0
1923	3.2	0.0	0.1	0.5	158.1	12.1	0.2	0.3	2.9	3.2	9.5	34.8	7.3	13.6	0.1	0.7	0.1	3.3	24.0	466.7

TABLE A-3.

Death ratios from the chief diseases by years.

(Ratios are per 1,000 of average strength.)

Period.	Influenza.	Cholera.	Small-pox.	Enteric group of fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Circulatory diseases.	Pulmonary tuberculosis.	Lobar pneumonia.	Other respiratory diseases.	Dysentery.	Diarrhoea.	Hepatic abscess.	Hepatic congestion and inflammation.	Scurvy.	Anæmia.	Veneral diseases.	All causes.
1910-14 (average)	...	0.18	0.01	0.38	0.28	0.13	0.15	0.17	0.22	1.05	0.22	0.10	0.03	0.03	0.01	0.01	0.06	0.04	4.40
1915-19 (average)	5.68	0.25	0.09	0.28	0.84	0.08	0.18	0.28	0.67	4.36	1.20	0.23	0.06	0.02	0.02	0.02	0.06	0.05	16.81
1920	1.43	0.02	0.06	0.14	0.46	0.02	0.08	0.20	1.08	2.49	1.54	0.12	0.01	0.04	0.02	0.01	0.05	0.05	9.81
1921	0.99	0.46	0.03	0.14	0.60	...	0.05	0.19	0.83	2.46	1.32	0.30	0.01	0.02	...	0.02	0.11	0.03	10.16
1922	0.07	0.03	0.01	0.10	0.58	0.03	0.08	0.18	0.42	1.88	1.07	0.18	0.03	0.03	...	0.02	0.12	0.01	6.86
1923	0.10	0.01	...	0.05	0.69	0.01	0.13	0.22	0.20	1.77	0.73	0.13	...	...	0.01	...	0.08	...	5.98

30. Table A-4. The distribution of disease amongst the Indian Troops is shown by Commands and Independent Districts, the admission and death ratios being given separately by diseases for each area.

The table is an interesting one and shows the great variation in the incidence of sickness and mortality which occurs with difference in locality and climate.

TABLE A-4.

Admission and death ratios for the chief diseases during 1923 by Commands and Independent Districts.

(Ratios are per 1,000 of strength.)

		Average annual strength.	Influenza.	Cholera.	Small-pox.	Enteric Group of fevers.	Malaria.	Sandy fever.	Pyrexia of uncertain origin.	Plague.	Circulatory Di- eases.	Pulmonary tuber- culosis.	Lobar pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic abscess.	Hepatic conge- stion and infar- ction.	Scurvy.	Anemia.	Veneral Diseases.	All causes.
Northern Command	Admission	44,802	2.5	...	0.3	0.8	206.9	20.9	...	0.8	1.7	2.9	11.1	31.7	8.0	13.0	...	0.8	...	3.9	14.6	484.4
	Deaths		...	...	...	0.02	0.40	...	...	0.31	0.18	0.27	1.07	0.42	0.60	...	...	0.02	...	0.04	...	4.78
Western Command	Admission	18,808	4.8	...	0.1	0.4	74.5	7.8	0.1	...	1.3	2.2	8.8	31.4	7.5	14.4	0.3	0.3	0.2	2.5	10.5	350.7
	Deaths		0.18	0.11	0.16	0.32	0.05	1.75	0.48	0.16	0.05	...	4.84
Eastern Command	Admission	22,284	3.8	0.1	0.1	0.6	110.8	2.9	0.1	...	1.5	5.0	6.5	30.0	0.3	13.3	...	0.8	...	1.7	32.9	428.7
	Deaths		0.13	0.18	...	0.04	...	0.89	0.13	0.20	0.36	0.13	0.04
Southern Command	Admission	19,642	3.6	0.1	0.2	0.4	105.9	0.8	0.3	0.8	2.5	2.7	3.5	30.7	8.8	13.6	0.3	1.7	0.3	4.7	44.2	477.3
	Deaths		...	0.05	0.10	0.25	0.25	0.10	0.51	0.46	0.15	...	3.20
Burma District	Admission	4,814	...	...	...	0.2	101.0	...	0.3	...	21.8	3.3	6.0	63.1	9.8	3.1	...	1.7	...	7.9	98.3	708.5
	Deaths		0.21	0.33	0.62	1.46	1.25
Waziristan District	Admission	27,459	3.8	...	...	0.1	189.3	12.1	0.8	...	3.8	3.6	15.4	41.9	6.5	15.0	0.1	0.7	0.3	5.3	10.7	407.9
	Deaths		0.44	0.04	2.44	0.26	0.26	3.79	1.03	0.20	0.23	...	13.43
Extra India	Admission	2,284	...	...	...	0.4	344.0	102.5	...	...	3.9	1.3	3.9	25.0	...	40.7	...	0.4	...	3.5	13.6	684.4
	Deaths		0.44	0.88
Troops on the line of march.	Admission	817	...	...	...	1.3	236.2	...	17.1	...	...	...	18.4	8.8	2.4	15.9	...	...	...	...	18.5	671.6
	Deaths		1.22
Wana Column	Admission	2,340	...	...	...	...	240.4	...	...	...	4.7	2.6	6.0	46.0	...	2.1	...	0.4	...	3.6	4.7	460.8
	Deaths		1.38	0.43	0.43

10

31. In Table A-5 are given in order the 15 Stations with a strength of over 1,000 which had the highest admission ratios per 1,000 during 1923; the ratios for deaths and constantly sick are also shown.

TABLE A-5.

Stations with strength of over 1,000 in order of their admission ratios for 1923, with deaths and constantly sick ratios.

Ratios are per 1,000 of strength.

Stations.	Average strength.	Admissions.	Deaths.	Average constantly sick.
Ambala	1,652	1,103.5	1.21	26.29
Maymyo	1,967	917.1	14.23	45.13
Aden	1,736	837.6	2.30	36.66
Mandalay	1,326	790.3	8.30	32.25
Manzai	1,290	786.0	50.39	205.01
Jandola	1,179	773.5	16.96	18.54
Lahore	2,203	756.7	4.54	29.90
Jubbulpore	1,819	622.9	3.30	23.63
Banna	2,650	618.1	14.34	53.03
Rawalpindi	3,535	614.1	7.35	24.00
Kotkai	1,643	584.3	6.09	13.54
Ferozopore	2,036	581.0	1.47	15.17
Poona	1,403	539.2	2.85	23.35
Khirgi	2,601	534.8	6.54	7.50
Sora Rogha	3,562	530.0	7.02	17.12

Ambala heads the list with 1,103.5 admissions per 1,000, the chief cause being malaria.

Maymyo comes next with 917.1 admissions per 1,000, the principal causes being malaria relapses and venereal disease.

Six Waziristan stations figure in the table, malaria being the chief cause.

The high death rate in Waziristan was largely due to enemy action.

The death rate of 50.39 in Manzai is accounted for by the collection there of serious cases of illness.

B.—SPECIAL DISEASES

32. *Influenza*.—(a) The incidence of this disease still further declined in 1923 from 5·6 to 3·2 per 1,000 of admissions and the death rate increased from 0·07 to 0·10 per 1,000. The case mortality also rose from 1·2 per cent to 3·3 per cent.

(b) The distribution of cases by Commands is shown in Table B-1.

TABLE B-1.

Influenza.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	113	2·5	...	...	...
Western	87	4·6	8	0·16	3·45
Eastern	84	3·8	...	...	...
Southern	71	3·6	...	...	...
Burma District . . . . .	...	...	...	...	...
Waziristan District	105	3·8	12	0·44	11·43
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	460	3·2	15	0·10	3·26

The cases occurred as small localized outbreaks, and usually coincided with similar outbreaks amongst the civil population.

33. *Cholera*.—Only 3 cases occurred during the year as compared with 22 in the preceding year.

Table B-2 shows the incidence by Commands and for all India.

TABLE B-2.

Cholera.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern . . . . .	...	...	...	...	...
Western . . . . .	...	...	...	...	...
Eastern	2	0.1	...	...	...
Southern	1	0.1	1	0.05	100.00
Barma District . . . . .	...	...	...	...	...
Waziristan District . . . . .	...	...	...	...	...
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	3	0.0	1	0.01	33.33

34. *Small-pox.*—15 cases occurred as against 21 in the preceding year. The incidence of this disease by Commands is given in Table B-3.

TABLE B-3.

Small-Pox.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	7	0.2	...	...	...
Western	1	0.1	...	...	...
Eastern	2	0.1	...	...	...
Southern	4	0.2	...	...	...
Barma District . . . . .	...	...	...	...	...
Waziristan District	1	...	...	...	...
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	15	0.1	—	—	—

All the cases were sporadic in origin and the stations chiefly affected were :—

Dharmasala	2	Borkee	1
Secunderabad	2	Lucknow	1
Nowahera	1	Rajkot	1
Bawalpindi	1	Mhow	1
Sialkot	1	Bombay	1
Lahore	1	Khirgi	1
Simla	1		

The vaccination state of fifteen of the above cases is as under :—

	Cases.
Never successfully vaccinated	1
Successfully vaccinated in adult life only	5
Successfully vaccinated in infancy only	3
Successfully vaccinated in infancy and revaccinated	6
TOTAL	15

35. *Enteric Group of Fevers.*—There were 76 admissions and 7 deaths during the year, giving admission and death ratios of 0·5 and 0·05 respectively, as compared with 0·7 and 0·10 in 1922.

Table B-4 shows the comparative statistics for this group.

TABLE B-4.

Enteric Group of Fevers.

Period.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14 (Average)	257	2·0	49	0·38
1915-19 (Average)	237	1·2	58	0·28
1920	129	0·6	31	0·14
1921	119	0·7	24	0·14
1922	105	0·7	15	0·10
1923	76	0·5	7	0·05

Table B-5 shows actual admissions and deaths for each member of the group over the same period of years.

TABLE B-5.
Enteric Group of Fevers.

Period.	Typhoid fever.		Paratyphoid "A"		Paratyphoid "B"		Enteric Group.		TOTAL.	
	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1910-14 (Average)	255	49	2	...	...	...	...	...	257	49
1915-19 (Average)	206	55	20	2	4	...	7	1	237	58
1920	17	3	8	...	...	...	104	28	129	31
1921	23	6	9	1	5	...	82	17	119	24
1922	33	3	21	2	5	...	46	10	105	15
1923	23	4	12	2	4	...	37	1	76	7

Statement showing the state of protection of Indian Troops against the Enteric Group of Fevers on 31st December 1923.

District.	STRENGTH ON 31-12-23.		NUMBERS UNPROTECTED ON 31-12-23.		NUMBERS PROTECTED ON 31-12-23.	
	Officers.	Other Ranks.	Officers.	Other Ranks.	Officers.	Other Ranks.
Peshawar	234	18,459	14	214	220	18,245
Kohat	68	4,801	19	558	49	4,243
Rawalpindi	187	11,215	16	360	171	10,855
Lahore	231	13,312	25	297	206	13,015
Waziristan	301	20,922	34	967	267	19,955
Sind-Rajputana	89	5,647	15	111	74	5,536
Baluchistan	198	12,853	24	318	174	12,535
United Provinces	218	13,862	5	196	213	13,666
Delhi Brigade	35	2,016	8	27	27	1,989
Allahabad Brigade	33	2,641	1	366	32	2,275
Presidency and Assam	34	2,019	1	109	33	1,910
Central Provinces	103	5,584	11	34	92	5,500
Poona	158	9,308	17	693	141	8,615
Bombay	32	2,123	...	74	32	2,049
Madras	77	4,662	9	277	68	4,385
Aden Brigade	24	1,686	4	16	20	1,670
Burma	76	4,714	20	1,102	56	3,612
GRAND TOTAL	2,098	135,774	223	5,719	1,875	130,055

N.B.—The figures are based on the Annual Sanitary Reports of the Districts for 1923.

The incidence of this group of diseases shows a marked and continuous decline of late years corresponding with an increase in the percentage of the men protected by T. A. B. inoculation which now averages over 95 per cent. of the total strength, vide Table B-6.

TABLE B-6.
Inoculation State of Indian Troops.

	OFFICERS.		OTHER RANKS.	
	1922.	1923.	1922.	1923.
Total present on 31st December	2,245	2,098	145,514	135,774
Number unprotected	302	223	27,378	5,719
Number protected	1,943	1,875	118,136	130,055
Percentage of troops protected	86.5%	89.4%	81.2%	95.8%

The distribution of cases by Commands is shown in Table B-7.

TABLE B-7.
Enteric Group of Fevers.
Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	36	0.8	1	0.02	2.78
Western	8	0.4	2	0.11	25.00
Eastern	19	0.9	3	0.13	15.79
Southern	8	0.4	...	...	...
Burma District	1	0.2	...	...	...
Waziristan District	2	0.1	1	.04	50.00
Aden and Bushire	1	0.4	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march	1	1.2	...	...	...
ALL INDIA	78	0.5	7	0.05	9.21

36. *Malaria*.—Malaria is still the outstanding cause of sickness in the Indian Army.

TABLE B-8.**Malaria.***Admissions and deaths since 1910.*

Period.	Admissions per 1,000.	Deaths per 1,000.
1910-14	113·3	0·28
1915-19	155·4	0·84
1920	208·5	0·46
1921	223·7	0·60
1922	173·9	0·58
1923	158·1	0·69

There was a fall of 15·8 per 1,000 in the admission ratio as compared with the preceding year.

This fall would have been even still more marked but for a severe outbreak in the Northern Command during the autumn months.

Table B-9 shows the distribution of the cases.

TABLE B-9.**Malaria.***Admissions and deaths by Commands (1923).*

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	9,269	206·9	18	0·40	0·19
Western	1,401	74·5	3	0·16	0·21
Eastern	2,668	119·8	4	0·18	0·15
Southern	2,061	105·9	2	0·10	0·10
Burma District	486	101·0	1	0·21	0·21
Waziristan District	5,197	189·3	67	2·44	1·29
Aden and Bushire	787	341·6	1	0·44	0·13
Wana Column	564	240·4	3	1·28	0·53
Troops on the line of march	193	236·2	...	...	...
ALL INDIA	22,646	158·1	99	0·69	0·44

TABLE B-10.

List of stations with an average annual strength of over 1,000 placed in order of incidence of admission ratios for malaria.

Ambala	795.4
Lahore	897.2
Ferozepore	891.9
Jandala	858.7
Aden	811.6
Manzai	806.2
Kotkai	275.7
Abbcttahad	262.4
Rawalpindi	251.8
Wana Mobile Column	246.4
Landowne	228.9

Ambala heads the list with an admission ratio of 795.4 per 1,000 as against 258.5 in the preceding year. This was part of the severe epidemic referred to above.

It will be noted that this table includes 4 Waziristan stations, again emphasizing the highly malarious character of that district.

The classification of the cases of malaria is given in Table B-11.

TABLE B-11.

Malaria.

Fresh Cases.—5,042 = 22.27 per cent of total cases.

Benign Tertian	1,969
Malignant Tertian	888
Quartan	16
Mixed infection	27
Diagnosed clinically	1,167
Malaria cachexia	980
	TOTAL
	5,042

Relapses.—17,604 = 77.73 per cent. of total cases.

Benign Tertian	5,729
Malignant Tertian	3,259
Quartan	40
Diagnosed clinically	8,576
	TOTAL
	17,604

37. *Sandfly Fever*.—There were 1,780 admissions with no deaths as against 2,110 admissions with no deaths in 1922. The ratio per 1,000 was 12.1 as against 14.3 in the previous year.

Table B-12 shows the distribution of the cases.

TABLE B-12.

Sandfly Fever.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	937	20.9	...	...	...
Western	146	7.8	...	...	...
Eastern	65	2.9	...	...	...
Southern	16	0.8	...	...	...
Burma District . . . . .	...	...	...	...	...
Waziristan District	332	12.1	...	...	...
Aden and Bushire	234	102.5	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	1,730	12.1	...	...	...

It will be seen that the Northern Command and Waziristan District were responsible for 1,169 cases out of the total of 1,730 for all India, showing that this is a disease of Northern India.

Of the geographical groups, No. VII North-West Frontier, Indus Valley and North West Rajputana accounted for 791 cases. The following stations in this group had the highest number of admissions :—

	Landi Kotal.	Bannu.	Jandola.	Dera Ismail Khan.
Actual admissions	339	123	63	58
Ratio per 1,000	132.7	49.4	53.4	36.2

38. *Pyrexia of uncertain origin.*—32 cases were admitted under this heading as compared with 36 in the preceding year.

39. *Dengue*.—The distribution of cases by Commands and Independent Districts is given in Table B-13.

TABLE B-13.

Dengue.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	19	0·4	...	...	...
Western	13	0·7	...	...	...
Eastern	163	7·3	...	...	...
Southern	140	7·1	...	...	...
Burma District	192	39·9	...	...	...
Waziristan District	2	0·1	...	...	...
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	529	3·7	...	...	...

This disease, which showed an increase during 1922, shows a still further increase in the year under review.

The stations most affected were—

Calcutta	150
Rangoon	125
Bombay	76
St. Thomas' Mount	52

40. *Scarlet Fever*.—One case was admitted at Lucknow.

41. *Diphtheria*.—No cases occurred during the year.

42. *Measles*.—There were 213 cases and 4 deaths in 1923 as against 75 cases and 4 deaths in 1922.

The stations with the largest number of cases were:—

Stations.	Admissions.	Deaths.
Maymyo	74	1
Quetta	26	...
Lansdowne	19	...
Bakloh	16	...
Pisbin	9	...
Dharmasala	7	...
Belgaum	7	...

43. *Cerebro-Spinal Fever*.—There were 11 admissions and 6 deaths from this disease, as against 4 admissions and 2 deaths in 1922.

They occurred at:—

Stations.	Admissions.	Deaths.
Maymyo	6	2
Dargai	1	1
Multan	1	...
Kalabagh and Mari Indus	1	1
Manzai	1	1
Hindubagh	1	1

44. *Mumps*.—The comparative statistics are shown below:—

	1923.	1922.
Actual admissions	398	664
Ratio per 1,000	2.8	4.5

These figures show a marked reduction as compared with 1921 and 1922. This may be attributed to more efficient preventive measures.

45. *Undulant Fever*.—There were 2 admissions, *viz.*, 1 at Ambala and 1 at Jubbulpore. Both recovered.

46. *Plague*.—Table B-14 shows the distribution of plague cases.

TABLE B-14.

Plague.

Admissions and deaths by Commands, 1923.

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	35	0·8	14	0·31	40·00
Western . . . . .	...	...	...	...	...
Eastern . . . . .	...	...	...	...	...
Southern	12	0·6	5	0·25	41·67
Burma District . . . . .	...	...	...	...	...
Waziristan District . . . . .	...	...	...	...	...
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march . . . . .	...	...	...	...	...
ALL INDIA	47	0·8	19	0·13	40·43

The increase is due chiefly to a localized outbreak at Mardan, where 30 cases and 12 deaths occurred.

47. *Relapsing Fever*.—Only 33 cases occurred during the year as compared with 63 in 1922.

The following stations furnished the highest number of cases :—

	Cases.
Bangalore	11
Quetta	8
Ambala	8
Peshawar	2
Jhelum	2
Sialkot	2
Saugor	2

48. *Kala-Azar*.—There were 4 cases and 1 death as against 6 cases and no death in 1922.

The cases occurred at :—

Dehra Dun	1 admission and 1 death.
Abbottabad	1 admission.
Dharamsala	1 admission.
Bakloh	1 admission.

49. *Oriental Sore*.—There were 279 admissions as against 292 in the previous year.

The stations chiefly affected were :—

	Cases.
Dera Ismail Khan	88
Manzai	36
Khirgi	16
Banna	14
Lahore	14
Sora Rogha	13
Kohat	12
Tank	10
Quetta	9

It will be seen that the great majority of the cases were in Waziristan.

50. *Pulmonary Tuberculosis*.—The ratios per 1,000 of admissions and deaths for pulmonary tuberculosis for the quinquennial period 1910-14 and for the years 1920 to 1923 are given in Table B-15.

TABLE B-15.
Pulmonary Tuberculosis.

Years.	Admissions per 1,000.	Deaths per 1,000.
1910-14	2.1	0.22
1920	4.8	1.08
1921	5.8	0.83
1922	5.7	0.43
1923	3.2	0.20

It will be seen that a satisfactory decrease has taken place in both the admission and death ratios.

The comparatively high incidence amongst Gurkha troops is brought out in the following Table B-16 :—

TABLE B-16.

Pulmonary Tuberculosis.

Admissions and deaths per 1,000 in (a) the Army in India, (b) Gurkhas alone and (c) the Army excluding Gurkhas.

Years.	Army of India.		Gurkhas.		Excluding Gurkhas.	
	A.	D.	A.	D.	A.	D.
1910-14	2.1	0.22	3.7	0.80	1.9	0.14
1920	4.3	1.08	6.0	2.68	4.1	0.89
1921	3.8	0.83	5.9	2.02	3.6	0.71
1922	3.7	0.42	6.6	0.81	3.3	0.37
1923	3.2	0.20	5.2	0.39	3.0	0.17

The distribution of the cases is shown in Table B-17.

TABLE B-17.

Pulmonary Tuberculosis.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	128	2.9	12	0.27	9.37
Western	41	2.2	1	0.05	2.44
Eastern	112	5.0	3	0.13	2.68
Southern	53	2.7	2	0.10	3.77
Burma District	16	3.3	3	0.62	18.75
Waziristan District	99	3.6	7	0.26	7.07
Aden and Bushire	3	1.3	...	...	...
Wana Column	6	2.6	...	...	...
Troops on the line of march	...	...	...	...	...
ALL INDIA	458	3.2	28	0.20	6.11

TABLE B-18.

Pulmonary Tuberculosis.

Stations with a strength of over 1,000 showing the highest admission ratios (1923).

Station.	Admission ratio per 1,000.	Station.	Admission ratio per 1,000.
Manzai	26.4	Jubbulpore	6.6
Dehra Dun	14.0	Jullundur	6.5
Jandola	10.2	Jhelum	6.3
Lansdowne	7.4	Lahore	5.4
Chaman	6.9	Abbottabad	5.2

51. *Lobar Pneumonia*.—The comparative statistics of this disease are given in Table B-19.

TABLE B-19.

Lobar Pneumonia.

Admissions and deaths by years.

Years.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14	995	7.7	136	1.05
1920	2,542	11.7	539	2.49
1921	1,859	10.6	431	2.46
1922	1,371	9.3	278	1.88
1923	1,364	9.5	253	1.77

TABLE B-20.

Lobar Pneumonia.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	496	11.5	75	1.67	15.12
Western	166	8.8	33	1.75	19.88
Eastern	144	6.5	20	0.90	13.89
Southern	69	3.5	10	0.51	14.49
Burma District	29	6.0	7	1.45	24.14
Waziristan District	422	15.4	104	3.79	24.64
Aden and Bushire	9	3.9	2	0.88	22.22
Wana Column	14	6.0	1	0.43	7.14
Troops on the line of march	15	18.4	1	1.22	6.67
ALL INDIA	1,364	9.5	253	1.77	18.55

TABLE B-21.

Lobar Pneumonia.

Stations showing the highest number of admissions.

Stations.	Admissions.	Deaths.	Stations.	Admissions.	Deaths.
Bannu	68	9	Piaza Raghza	39	10
Sora Rogha	55	13	Razmak	37	14
Kohat	53	9	Bolgaum	37	2
Peshawar	52	16	Secunderabad	33	...
Bombay	51	1	Tank	32	5
Jandola	49	11	Lahore	29	4
Rawalpindi	49	3	Loralai	28	8
Quetta	48	8	Idak	28	7
Abbottabad	45	11	Kirkee	28	1
Poona	40	...	Kotkai	28	2
Jubbulpore	39	3			

52. *Other Respiratory Diseases.*—There were 4,979 admissions under this heading and 105 deaths giving ratios of 34.8 and 0.73 respectively, compared with 36.4 and 1.07 in 1922. Table B-22 shows the admissions and deaths by years.

TABLE B-22.

Other Respiratory Diseases.

Admissions and deaths by years.

Years.	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1910-14	17,643	27.1	150	0.22
1920	11,597	53.6	384	1.54
1921	7,468	42.6	232	1.32
1922	5,860	86.4	158	1.07
1923	4,979	34.8	105	0.73

TABLE B-23.

Other Respiratory Diseases.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	1,421	31.7	19	0.42	1.34
Western	591	31.4	9	0.48	1.52
Eastern	646	29.0	8	0.36	1.24
Southern	608	30.7	9	0.46	1.49
Burma District	395	82.1	6	1.25	1.52
Waziristan District	1,151	41.9	53	1.93	4.60
Aden and Bushire	57	25.0	...	...	...
Wana Column	108	46.0	1	0.43	0.93
Troops on the line of march	7	8.6	...	...	...
ALL INDIA	4,979	34.8	105	0.73	2.11

The chief diseases included in this group are :—

	Admissions.	Deaths.
Lobular pneumonia	608	90
Bronchitis	3,843	2
Pleurisy	257	5
Asthma	119	1
Laryngitis	101	..

53. *Dysentery, Colitis and Diarrhoea.*—This group accounted for 4,757 admissions as compared with 5,641 in 1922, giving an admission ratio of 83·2 for 1923 as against 88·2 in 1922, a reduction of 5·0 per 1,000.

TABLE B-24.

Dysentery, Colitis and Diarrhoea.

Admissions, deaths, and their ratios for 1923.

	ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Dysentery	1,050	7·3	18	0·18
Colitis	1,755	12·3	6	0·04
Diarrhoea	1,952	13·6	...	...
TOTAL	4,757	83·2	24	0·17

TABLE B-25.

Dysentery, Colitis and Diarrhoea.

Ratios per 1,000 for the three diseases for the quinquennial periods 1910-14 and 1915-19 and for the years 1920 to 1923.

Period.	DYSENTERY.		COLITIS.		DIARRHŒA.		COMBINED RATE.	
	A.	D.	A.	D.	A.	D.	A.	D.
1910-14 (Average)	18·4	0·10	8·4	0·01	11·7	0·08	33·5	0·14
1915-19 "	17·1	0·23	19·7	0·11	17·4	0·08	54·6	0·41
1920	6·1	0·12	28·1	0·05	14·9	0·01	49·1	0·18
1921	18·7	0·80	20·5	0·07	20·5	0·01	54·7	0·38
1922	8·5	0·18	18·9	0·07	15·7	0·03	38·2	0·28
1923	7·3	0·18	12·3	0·04	13·6	...	33·2	0·17

It will be seen that the reduction is spread over all the 3 members of the group and that the death rate 0·17 is lower than it has been since pre-war days.

The distribution of these diseases is shown in Tables B-26 (a), (b) and (c).

It will be seen that 47 per cent. of the total cases of Colitis occurred in Waziristan.

TABLE B-26 (a).

Dysentery.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	399	8·9	4	0·09	1·00
Western	141	7·5	3	0·16	2·13
Eastern	137	6·2	3	0·13	2·19
Southern	173	8·8	...	...	...
Darma District	47	9·8	...	...	...
Waziristan District	151	5·5	8	0·29	5·30
Aden and Bushire . . . . .	...	...	...	...	...
Wana Column . . . . .	...	...	...	...	...
Troops on the line of march	2	2·4	...	...	...
ALL INDIA	1,050	7·3	18	0·13	1·71

TABLE B-26 (b).

Colitis.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	186	4.2	1	0.02	0.54
Western	209	11.1	...	...	...
Eastern	134	6.0	...	...	...
Southern	290	14.6	1	0.05	0.84
Burma District	39	8.1	...	...	...
Waziristan District	829	30.2	4	0.15	0.48
Aden and Bushire	34	14.9	...	...	...
Wana Column	27	11.5	...	...	...
Troops on the line of march	7	8.6	...	...	...
ALL INDIA	1,755	12.3	6	0.04	0.84

TABLE B-26 (c).

Diarrhoea.

Admissions and deaths by Commands (1923).

Command.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	581	13.0	...	...	...
Western	270	14.4	...	...	...
Eastern	296	13.8	...	...	...
Southern	268	13.6	...	...	...
Burma District	16	8.1	...	...	...
Waziristan District	411	15.0	...	...	...
Aden and Bushire	93	40.7	...	...	...
Wana Column	5	2.1	...	...	...
Troops on the line of march	13	15.9	...	...	...
ALL INDIA	1,952	13.6	...	...	...

Table B-27 gives the stations with the highest admission ratios.

TABLE B-27.

Dysentery, Colitis and Diarrhoea.

Stations with the highest admission ratios (1923).

Stations.	Admissions.	Ratio per 1,000.
<i>Dysentery.</i>		
Lahore	92	41.8
Manzai	51	39.5
Ferozepore	52	25.5
Poona	33	23.5
Mandalay	29	21.9
<i>Colitis.</i>		
Manzai	174	134.9
Khirgi	229	88.0
Jandola	94	79.7
Piazha Raghza	111	45.3
Kotkai	67	40.8
Poona	54	38.5
<i>Diarrhoea.</i>		
Bannu	103	38.9
Landi Kotal	79	30.9
Rawalpindi	94	26.6
Jandola	31	26.3
Poshawan	80	22.2

An analysis of the cases of Dysentery as to the causative organism gives the following result :—

Amœbic Dysentery	678
Bacillary Dysentery	15
Dysentery Group (i.e. organism not determined)	357

From this it appears that at least 70 per cent. of the cases diagnosed Dysentery were of amœbic origin.

54. *Venereal Diseases*.—The admission rate decreased from 32.7 in 1922 to 24.0 in 1923, and no arm of the service shows an increased incidence.

Prophylactic treatment rooms have been established by most units, but are very little used by the Indian Soldier. He will require much more education before he appreciates the use and value of these rooms.

The troops in Burma still give a very high incidence, Mandalay and Maymyo being, respectively, first and second amongst the nine stations giving the highest ratios.

The average stay in Hospital for each case decreased from 43 days in 1922 to 36 days in 1923 ; the average stay for each disease being :—

Syphilis	39 days.
Soft Chancre	34 "
Gonorrhœa	34 "

The number of days lost to the State from venereal disease in 1923 was 123,840.

It is noted that Syphilis gives the longest average stay in hospital, and this is probably due to the tendency which still exists amongst some medical officers of retaining Syphilis cases in Hospital after they have become non-infective.

A large number of infections occur while men are on leave in their own villages and the question of dealing with the venereal incidence among the civil population is one which will have to be faced in the near future.

It is the custom in some units to discharge from the service men who have contracted venereal disease and who may or may not have been rendered non-infectious on discharge from hospital ; in Syphilis cases it is quite certain that they have not been cured. These men on return to civil life infect other women, who in turn infect other soldiers, so that a vicious circle has been formed.

Speaking of India generally there are no special facilities for the treatment of venereal disease among the civil population, and it is difficult to see how a lowered incidence in the Army is to be expected, while *pari passu* there is a heavy incidence in certain sections of the civil population.

All serological work in connection with venereal disease is carried out at the Central Dermatological Laboratory, Poona.

Admission Rate.

Admission ratio per 1,000 of strength for all forms of venereal diseases for the years 1920-23 and the quinquennial period 1915-19 are given in Table B-28 and the admission ratio per 1,000 of strength by Commands in Table B-29.

TABLE B-28.

Venereal Diseases.

Actual admissions and ratio per 1,000 by years.

Year.	Average annual strength.	TOTAL ADMISSIONS NEW INFECTIONS.		TOTAL ADMISSIONS RELAPSE CASES OR OLD INFECTIONS.		TOTAL ADMISSIONS ALL FORMS OF VENEREAL DISEASE.	
		Actual.	Ratio per 1,000 of strength.	Actual	Ratio per 1,000 of strength.	Actual.	Ratio per 1,000 of strength.
1915-19 (Average)	204,298	...	...	...	...	10,204	49.9
1920	216,445	...	...	...	...	13,087	60.5
1921	175,384	6,192	35.3	1,304	7.4	7,496	42.7
1922	147,840	4,054	27.4	778	5.3	4,832	32.7
1923	143,234	2,810	19.6	680	4.4	3,440	24.0

TABLE B-29.

Venereal Diseases.

Admission ratio per 1,000 of strength by Commands.

COMMANDS.	1920.	1921.	1922.	1923.
Northern	37.2	24.7	19.6	14.6
Western	47.9	39.6	30.4	19.5
Eastern	73.5	57.0	45.0	32.9
Southern	96.9	63.8	55.8	44.2
Burma District	164.3	161.1	106.9	98.3
Waziristan District	27.0	18.1	18.3	10.7
Troops on the line of march	4.8	39.7	16.9	13.5
ALL INDIA	60.5	42.7	32.7	24.0

TABLE B-30.

Venereal Diseases.

Stations with average strength of over 1,000 furnishing the highest admission ratios during 1920, 1921, 1922 and 1923.

1920.			1921.			1922.			1923.		
Station.	Average annual strength.	Admission ratio per 1,000.	Station.	Average annual strength.	Admission ratio per 1,000.	Station.	Average annual strength.	Admission ratio per 1,000.	Station.	Average annual strength.	Admission ratio per 1,000.
Deolali . . .	1,049	380.3	Mandalay . . .	1,464	233.6	Mandalay . . .	1,411	136.1	Mandalay . . .	1,326	153.1
Bombay . . .	2,026	171.4	Maymyo . . .	1,028	156.6	Maymyo . . .	1,920	90.6	Maymyo . . .	1,967	79.3
Bangalore . . .	4,242	191.5	Bareilly . . .	1,872	101.5	Calcutta . . .	1,015	85.7	Secunderabad . . .	1,982	69.1
Belgaum . . .	2,263	122.8	Ahmednagar . . .	1,767	92.2	Bangalore . . .	2,748	81.1	Meerut . . .	2,355	66.2
Poona . . .	3,104	122.4	Kirkee . . .	2,881	91.1	Poona . . .	1,624	79.4	Poona . . .	1,402	64.2
Secunderabad . . .	3,516	118.9	Bombay . . .	1,276	60.9	Kirkee . . .	1,736	77.2	Bangalore . . .	2,667	56.2

TABLE B-31.

Venereal Diseases.

Admission ratio per 1,000 of strength by Arms of the Service.

	1920.	1921.	1922.	1923.
Cavalry	29·8	17·9	15·4	10·4
Artillery (including Indian Drivers)	98·8	78·1	55·5	36·9
Sappers and Miners	67·3	38·1	36·2	26·8
Infantry	51·3	35·3	25·8	19·8

TABLE B-32.

Invaliding and deaths.

Invaliding and deaths for the years 1920 to 1923.

Years.	INVALIDS DISCHARGED FROM THE SERVICE.						DEATHS.	
	SYPHILIS.		SOFT CHANCRE.		GONORRHEA.		Actual.	Ratio per 1,000.
	Actual	Ratio per 1,000.	Actual.	Ratio per 1,000	Actual	Ratio per 1,000.		
1920	118	0·55	32	0·15	168	0·77	11	0·05
1921	73	0·42	9	0·05	129	0·73	6	0·03
1922	60	0·41	16	0·11	106	0·72	1	0·01
1923	46	0·32	9	0·06	62	0·43	...	...

55. *Beri-Beri*.—There were 75 admissions and 12 deaths during the year as against 2 cases and no deaths in 1922.

This increase was due to an outbreak amongst Burmese troops in Maymyo and Mandalay.

An exhaustive enquiry showed the great majority of the cases were amongst Chins, Kachins and Shans who are accustomed to eating unpolished rice in their villages and are liable to contract beri-beri when, on enlistment, their diet is suddenly changed to one of polished rice deficient in vitamin-B. The outbreak extended into 1924, and was eventually stopped by the substitution of atta for one-half of the rice ration.

56. *Scurvy*.—There were 15 admissions and no deaths from Scurvy, as against 58 admissions and 3 deaths in 1922.

TABLE B-33.

Scurvy.

Admissions and deaths by Commands (1923).

COMMAND.	ADMISSIONS.		DEATHS.		Case mortality per cent.
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	
Northern	1	0.0	...	...	....
Western	4	0.2	...	...	....
Eastern . . . . .	...	...	...	...	....
Southern	6	0.3	...	...	....
Burma District . . . . .	...	...	...	...	....
Waziristan District	5	0.2	...	...	....
Aden and Bushire . . . . .	...	...	...	...	....
Troops on the line of march . . . . .	...	...	...	...	....
ALL INDIA	15	0.1	...	...	....

57. *Scabies*.—Table B-34 gives the comparative figures for this disease for the years 1920 to 1923 inclusive.

TABLE B-34.

Scabies.

	1920.	1921.	1922.	1923.
Actual admissions	5,949	1,989	1,192	802
Ratio per 1,000	27.5	11.3	8.1	5.6

The incidence of this disease shows a steady and satisfactory decrease.

58. *Leprosy*.—There were 13 cases of leprosy admitted during the year, giving a ratio of 0.09 per 1,000, as against 28 cases and a ratio of 0.19 in 1922. 12 were invalided from the service.

59. *C. Invaliding.*—The number of men invalided from the Indian Army in 1923 was 2,828 as against 2,659 in 1922, giving a ratio of 16.3 per 1,000 as compared with 18.0 in the previous year.

The principal causes of invaliding are shown in Table C-1.

TABLE C-1.

Invaliding.

	1921.	1922.	1923.
Leprosy	40	28	12
Malaria	474	279	302
Veneral Diseases	211	182	117
Nervous Diseases	156	115	123
Diseases of the Eye	374	185	176
Diseases of the Ear and Nose	88	103	83
Circulatory Diseases	216	96	111
Pulmonary tuberculosis	504	529	473
Lobar pneumonia	24	5	12
Other Respiratory Diseases	209	142	157
Anemia	79	57	45
Injuries	414	272	210

As in previous years pulmonary tuberculosis is responsible for the largest number of invalids, *viz.*, 473: this compares favourably, however, with 529 in 1922 and 504 in 1921.

Malaria comes next on the list with 302 invalids, an increase of 23 as compared with 1922, but a decrease of 172 as compared with 1921.

Injuries were responsible for 210 invalids as against 272 in 1922 and 414 in 1921.

D. BRITISH OFFICERS OF THE INDIAN ARMY.

TABLE D-1.

British Officers of the Indian Army.

60. Average strength, admissions, deaths, and ratios per 1,000 for the years 1921, 1922 and 1923.

	1921.	1922.	1923.
Average annual strength	3,285	3,367	2,248
Actual admissions	2,654	1,933	1,215
Ratio per 1,000	807.9	574.1	540.5
Actual deaths	37	14	10
Ratio per 1,000	11.26	4.16	4.45

The admission ratio per 1,000 has fallen from 807.9 in 1921 and 574.1 in 1922 to 540.5 in 1923, but is still unduly high.

The principal causes of the admissions and deaths are given in Table D-2.

TABLE D-2.

British Officers of the Indian Army.

Admissions and deaths (1923).

Diseases.	Admissions.	Deaths.
Malaria	330	—
Injuries	165	4
Sandy fever	49	—
Bronchitis	48	—
Diarrhoea	38	—
Tonsillitis	37	—
Cellulitis	32	—
Dysentery	31	1
Dengue	27	—
Colitis	27	—
Jaundice	27	—
Synovitis	26	—
Gastritis	23	—
Pharyngitis	23	—

E. EX—INDIA.

HEALTH OF THE TROOPS IN THE CHINA COMMAND.

61. The salient facts regarding the health of the troops are given in Table E-1.

TABLE E-1.
China Command.

Years.	Strength.	ADMISSIONS.		DEATHS.	
		Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
1921	1,445	455	314.9	7	4.84
1922	1,524	628	412.1	2	1.31
1923	1,435	581	404.9	4	2.79

The admission ratio, which rose from 314.9 per 1,000 in 1921 to 412.1 in 1922, shows a slight decrease to 404.9 in 1923. The death ratio which fell from 4.84 in 1921 to 1.31 in 1922 has increased to 2.79 per 1,000 in 1923.

Table E-2 gives the principal diseases responsible for the admissions and deaths in 1922 and 1923.

TABLE E-2.
China Command.

Disease.	1922.				1923.			
	ADMISSIONS.		DEATHS.		ADMISSIONS.		DEATHS.	
	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.	Actuals.	Ratio per 1,000.
Malaria	111	72.8	...	...	84	58.5	...	...
Influenza	45	29.5	...	...	7	4.9	...	...
Veneral disease	130	85.8	...	...	101	70.4	...	...
Other Respiratory Diseases.	52	34.1	...	...	128	89.2	...	...
Pulmonary tuberculosis	13	8.5	1	0.66	17	11.8	2	1.39
Diarrhoea	17	11.2	...	...	7	4.9	...	...
All other causes	280	170.6	1	0.60	237	165.2	2	1.39
TOTAL	628	412.1	2	1.31	581	404.9	4	2.79

SECTION III.

General population.

62. *Introduction.*—The death rate in British India for 1923 was 25·00 against 24·02 in 1922 and a quinquennial mean of 36·85. Even after cognisance has been taken of the 1918 influenza epidemic, this represents a large saving in lives though it is under that of 1922.

The birth rate was 35·06 against 31·85 in 1922 and 32·47 during the quinquennium : while the infantile mortality was 176 against 175 in 1922 and 198 in 1921. Let us look at what was taking place in Great Britain at the same time. The table shows it at a glance.

Country.	Death rate 1923.	Birth rate 1923.	Infantile death rate 1923.	REMARKS.
India	25·00	35·06	176	
England and Wales	11·6*	19·7†	69*	* Lowest on record. † Lowest on record excepting war years.
Scotland	14·4	21·9‡	98	‡ Lowest on record. § 5th Lowest on record.

In England and Wales 1923 was a record year, the death rate and infantile mortality being the lowest ever recorded.

How has this been achieved and how long has it taken to accomplish? It is largely the result of the awakening of what we may term a "public health conscience," a process which has been in continuous steady operation for well over half a century. Sir George Newman, in congratulating the country on this year's record and on the very high rate of interest in life and well being, which public expenditure on the maintenance of the health of the country is earning, warns us not to expect a yearly continuation of this reduction even though much ill health is still preventible. He calls the public still "willing victims" in some cases to smallpox and to venereal disease, suggests that influenza, respiratory diseases, tuberculosis, and cancer exact too heavy a toll, and animadverts on the apparent indifference to general principles of many local authorities and medical officers of health. Let us then take our lesson from his advice, and move forward, with a singleness of purpose, to educate the public in matters hygienic, to concentrate on our strongholds of disease, to endow and organise systematic research and investigation with a view to improving our health organisation. The health organisation of a nation is a matter for the highest qualities of statecraft, and cannot be left to chance or caprice in India to-day any more than it could in Great Britain half a century ago.

That Great Britain has had to go through her apprenticeship in this matter and has succeeded, will be realised when we come to regard her condition in the fifties of last century. In 1854 the infantile mortality in England and Wales (*i.e.*, the mortality amongst children before reaching the age of one year) was 164 of every 1,000 males, and 135 of every 1,000 females born. By 1912 this mortality had been reduced to 120 and 93 respectively. It is still falling, the figures for 1922 being 90 males and 69

females. This and lessened mortality at later ages have greatly increased the expectation of life at birth. This in 1854 was for males 39.91 years and for females 41.85 years, whereas, in 1922, it was for males 54.6 years and for females 58.6 years—truly a remarkable record. Let us try to imitate it; but let us do so with a full appreciation of the facts and of the difficulties with which we are confronted. These have been well summarised in two recent articles* by former Indian medical administrators of great experience. It is pointed out that, though the education in sanitation of the present classes of India will take a long time, it will take longer still to remove their prejudices so as to allow of their appreciating the advantages conferred by such education. It is a very difficult matter to attempt to inculcate on any people principles of general and personal hygiene which may be antagonistic to their own ideas or those associated with the religious ritual of their spiritual authorities, and no less so in a country of the vastness and complexity of India. Slow progress should not be allowed to interfere with the singleness of purpose with which such teaching should be pursued by our administration, as fruit will be produced in time as it was in Great Britain. Apathy and indifference may be shown by many local authorities and municipalities; but, with time, a correct perspective of public and domestic health problems is bound to come, more especially if our larger urban areas provide the necessary object lessons. Much can be and should be done by the Hygiene Publicity Bureaus of the various provinces in widening the outlook of the villagers in such matters by demonstrations, oral and printed propaganda, lantern lectures etc., through the agency of travelling dispensaries and the Education Department.

What we want to be able to record is progress even though it be slow: what we want to be able to show is the exercise of patience. To help in effecting these we must employ the right stamp of officer in adequate numbers, on all important provincial public health problems under the direction of the provincial public health authority. When this organisation has matured the rest will follow in time; but let there be no doubt that if the interest is to be satisfactory, the capital must be forthcoming and the investment of it made with discretion and forethought.

With these preliminary remarks I will call attention to the chief features of the vital statistics of the country as ascertained provincially and from private sources. Small rises and falls of ratios outside of known epidemic causes, may, in fact generally, mean little in so far as the country as a whole is concerned. Provincial evolution in health matters does not always proceed at the same pace, and it is therefore necessary, in forming an estimate of progress, to consider each province separately and over a course of years. This section, though it enters into considerable detail statistically, is not meant to replace the study of the provincial reports, but rather to guide the reader in his selection of points for special investigation from these. It can and does deal with general problems when they affect more than one province.

68. **Rainfall and other weather conditions.**—The Director General of Observatories has supplied the following details of the chief features of the rainfall and other weather conditions for 1923. Generally speaking the amount and distribution of the rainfall during the year were fairly normal except in Bihar and Orissa, Sind, Gujrat, and the Madras Deccan where it was in defect. The monsoon conditions were briefly as follows:—

I. A revival of the monsoon in January caused widespread rain in South Madras; the winter rainfall associated with western disturbances was confined to the Punjab and the surrounding hills in January, while in February it was abundant over the whole of northern India and the northeast of the Peninsula.

* British Medical Journal, December 15 and 22, 1923, Col. W. G. King, C.I.E. I.M.S. (Ret.) and Major General Sir P. Hehir, K.C.I.E., G.B., C.M.G., I.M.S. (Ret.)

II. During the hot weather months the weather was generally much drier than usual in the Gangetic plain and the central parts of the country.

III. The monsoon was late in arriving, but gave fairly well distributed rain over most of the country, excluding Sind, Gujarat, and parts of Madras, where the amount was decidedly in defect. On the other hand Lower Burma and Malabar had very heavy rain.

IV. The monsoon retreated from Northern India at about the normal date, but was then less vigorous than usual in the Peninsula, its activity being limited to the extreme south of Madras.

V. The winter rains were unusually early and heavy in northwest India at the close of the year.

(a) The cold weather period (January and February). There were two revivals of the monsoon in the south of the Bay during the month of January: the first, which occurred in the second week, caused widespread rain in south Madras with locally heavy rain along the south Coromandel coast, the second resulted in fairly widespread rain in south east Madras between the 25th and 27th. During this month there was rain chiefly in the region extending from Baluchistan to the west of the United Provinces; but, over the rest of the country excluding the south of the Peninsula, the weather was unusually dry. In February the disturbances followed a more southerly track than usual and caused abnormally heavy rain over the whole of Northern India and the north-east of the Peninsula; the heaviest fall occurred on the montane and submontane areas of the Punjab and of the United Provinces, and on and near the coast of the Circars, Orissa, and south-west Bengal.

During the second fortnight of February temperature was generally low over the greater part of the country.

(b) The hot weather period (March to May). During March there was much less rain than usual over the whole of Northern India excluding Kashmir and North-West Frontier Province, although, in the central parts, the rainfall was abundant for this time of the year. In the Peninsula it was in excess in the Bombay Deccan and Hyderabad north, and normal or in slight defect in Hyderabad south, Mysore, Madras south east, and the Madras Deccan.

(c) The monsoon period (June to September) was notable in that both branches of the monsoon were late.

The Bay monsoon was vigorous in Burma and Assam, and fairly so in Bengal in the latter half of June, though there was less rain than usual in Bihar and Orissa. It was abnormally weak in the United Provinces.

The Arabian Sea monsoon was very weak. In the Peninsula the weakness that had set in at the close of July persisted throughout August, and the month's fall was in large defect. In September it was mainly active in the Peninsula.

(d) The period of the retreating south west monsoon (October to December) showed a final outburst of widespread and locally heavy rain in the United Provinces. In November heavy rain on the north Madras coast did extensive damage in the district of Vizagapatam. In December the activity was in the extreme south-east of the Peninsula.

64. *Agricultural and Economic conditions.*—The following extracts from season and crop reports for 1922-23 show something of the conditions of the agricultural population.

Madras (1922-23). The season was generally favourable on the west coast and in the Agency, Godavari, Guntur, the Carnatic, and the southern districts except

Madura; but unfavourable in Bellary and Anantapur. The total area sown was below the average, especially in the Deccan and the central districts, but exceeded that sown in the previous year. The crop outturn was favourable except in Ganjam and the Deccan. In the latter the yield of cereals was only 78 per cent. of the average in the Deccan.

There was neither famine nor scarcity during the year. Test works and kitchens which had been opened in the previous year in the taluks of Pattikonda, Dhone and Kurnool were closed.

The prices of the principal food grains were generally lower than in 1921 in the Circars and the Deccan, and either stationary or higher in the rest of the Presidency, especially in north Arcot, Trichinopoly, and the South.

The stocks of food grains were generally sufficient.

The mortality from contagious diseases amongst cattle dropped from 34,258 in 1921-22 to 28,178 during the year. The decrease occurred mainly under rinderpest, the mortality from which fell from 10,121 in 1921-22 to 4,279. This is the lowest figure recorded for many years. The disease was prevalent only in Ganjam and Kistna. Anthrax in a severe form was prevalent in Ganjam, Vizagapatam, Kistna, Kurnool and Nellore, and haemorrhagic septicaemia in Ganjam, Guntur, Chingleput and Tanjore. There was a considerable increase in the mortality from black-water.

No tracts required special notice by reason of any permanent lowering in the standard of agricultural prosperity.

The delta ryot suffered from the low prices of paddy and jaggery in the north and the dulness of the paddy market in the south. The position of the Deccan ryot improved generally except in Bellary. The west coast had a prosperous year, and the condition of the taluks of Malabar affected by the rebellion, though not up to the normal, improved. Wages remained high, and the condition of labourers was improved by a further fall in the prices of food grains, etc.

Bengal (1922-23). Though such a prolonged drought had been unknown during the past decade and that in Eastern Bengal during April and May was unprecedented, yet the season was on the whole good for the winter rice crop and fair only for other crops.

Owing to the good harvest and the restriction on export, the price of rice during the early part of the year was somewhat lower than in the previous years. After the withdrawal of export restrictions a tendency to rise was evident; but the influx of new autumn rice into the market exercised a steadying effect. The prices, however, did not fall much. The prices of wheat and other food grains remained moderate. After being depressed for years, the jute market improved greatly.

With the recovery in the price of jute and the fall in the prices of imported foreign goods and rice, the general condition of the people, especially in the bigger jute districts, improved. In no part of the province did actual distress prevail except in the districts of Rajshahi, Bogra, and Pabna, where, despite much flooding, there was no serious outbreak of any epidemic disease. In parts of Rajshahi test relief works were opened.

The wages of agricultural labourers remained practically the same as last year.

Bombay (1922-23). The season of 1922-23 was, so far as the actual produce of the land was concerned rather better than the average, especially in Sind, though a large part of the East of the Deccan and Karnatak, after badly distributed rainfall, had a kharif failure.

In the Presidency proper the area under food crops decreased by about 4.1 per cent., but it showed an increase of 3.4 per cent. over the normal. The area under non-food crops rose by 15.3 and 51.4 per cent. over the preceding year and the average respectively; in Sind it fell by 8.1 per cent. below the area of the previous year and showed

an increase of 6·1 per cent. over the average. The area under cotton, under the stimulus of high prices, increased by 30·8 per cent. over the previous year and by 25·5 per cent. over the average; whilst in Sind it rose by 90·1 per cent. over the previous year and by 48·9 per cent. over the average.

The area under irrigation in the Presidency proper decreased by five per cent. as compared with 1921; but in Sind it rose by 5·7 per cent. (+1,70,000 acres), due mainly to good inundation.

Prices except for cotton consistently fell, the fall being marked in the case of food grains. Wages did not fall appreciably. For the classes labouring for cash wages it has been a very good year, and for all other divisions of the agricultural population a distinctly inferior one.

North-West Frontier Province (1923). The season was generally favourable for kharif sowings which were slightly less. An increase of 4 per cent. on the area maturing took place.

Outbreaks of plague in Hazara and Peshawar and the appearance of malaria in Kohat did not affect agricultural operations to any appreciable extent. Rabi was a bumper crop.

The total area which failed in 1923 was 180,257 acres against 109,808 in 1922.

Cattle mortality was light and fodder was sufficient.

Prices were generally lower than in the previous year.

The condition of the population was satisfactory on account of the good harvests.

United Provinces (1922-23). Climatic conditions were on the whole very favourable to the rabi harvest.

The cultivated or net cropped area decreased by 195,939 acres or 0·6 per cent. as compared with 1921, large portions of Budaun and Pilibhit being under water.

Though the kharif sown was short, almost all districts had more extensive rabi sowings. The food grains were much cheaper than in the preceding year.

The cattle were in a fairly good condition. Rinderpest, foot and mouth and other cattle diseases prevailed in a number of districts, but the mortality was not high. Fodder was generally sufficient.

The year was a prosperous one for cultivators and labourers for whom ample work existed throughout.

Burma (1922-23). The season may be characterised as a poor one for rice, early sesamum, and cotton; but for late sesamum, other late ya crops, and for island crops it was fairly good. 175,299 acres more were sown and 187,054 acres more matured in 1922-23 than in the previous year.

Prices did not increase as the season advanced. As regards rice the cultivator, in addition to a poor crop, got a worse price than last year.

Cattle were generally healthy, but mortality from contagious disease was excessive in certain districts. A few districts reported deterioration from flooding and salt water inundations. There were no marked changes in the general welfare of the agricultural population.

Punjab (1922-23). The season was a very favourable one characterised by a good monsoon and plentiful winter rain. The kharif acreage on the south-east was therefore much above the average.

The total irrigated area has risen by two million acres in the last eight years. The acreage under unirrigated crops varies greatly with the character of the season.

All prices tended to rise to a maximum after the war and during the post-war period 1918-19 to 1920-21. Since then there has been a fall, especially in wheat and grain, though sugar remained high.

Deterioration from deforestation, want of drainage, flooding, malaria, and consequent depopulation has operated very severely in Karnal and the Khadir areas. The crux is said to be the rapid deforestation which allows of the flooding, and re-afforestation schemes are necessary before permanent benefits can be expected.

The condition of the agricultural population was generally good.

Bihar and Orissa (1923-24).—The season was marked by a very unequal distribution of rainfall, especially during the monsoon period, when Chota Nagpur got more than its normal share while most parts of Bihar suffered from deficit.

The prices of food grains ruled generally lower in most districts, but there was a tendency to a rise in the price of rice in the latter half of the year.

Contagious diseases of cattle were prevalent more or less throughout the province. All districts except Cuttack reported rinderpest, most virulent in the South Bihar and Chota Nagpur districts. Outbreaks of hæmorrhagic septicæmia were reported in all districts. Anthrax appeared in eight districts. Heavy floods in the Sone and Ganges rivers caused considerable hardship to cattle in the villages on the banks.

The different harvests were fairly good, and the condition of the agricultural population was generally satisfactory.

The demand for agricultural labour was fairly normal throughout, there being no lack of employment.

Births and Deaths.

65. *British India.*—Births numbered 8,466,085 or 777,126 more than in 1922. There was an increase over 1922 everywhere except in Burma and Coorg. Bengal, Bihar and Orissa, United Provinces, Punjab, North-West Frontier Province, Madras Presidency and Bombay Presideacy showed an increase in the number of births as compared with the quinquennial mean.

The birth rate was 35.06 against 31.85 in 1922.

In the following table the proportion of male to female births is given, female births in each case being taken as 100. Defective registration, especially of female births, must be remembered in this connection.

	1923.	1922.
Delhi	111	107
Bengal	108	108
Bihar and Orissa	105	118
Assam	106	106
United Provinces	112	111
Punjab	112	112
North-West Frontier Province	126	127
Central Provinces	105	105

	1923.	1922.
Madras	104	104
Bombay	109	109
Burma	106	Upper Burma 104 Lower Burma 105
Coorg	108	105
Ajmer-Merwara	114	114

Births exceeded deaths in all areas except in Coorg : but this may be an index of defective registration of the former.

Deaths numbered 6,036,931 against 5,800,092 in 1922, an increase of 236,839. Registered births exceeded registered deaths by 2,429,154.

The death rate was 25.00 against 24.02 in 1922 and a quinquennial mean of 36.85. The urban death rate was 29.24 as compared with 27.5 and the rural rate was 24.59 as against 23.69 in 1922. In Bengal and Assam the rural death rates exceeded the urban. Three good seasons have not been without their effect on the fecundity of the population.

The following table, on lines similar to previous years, presents the important facts in regard to births and deaths :

Provinces.	BIRTHS.			TOTAL DEATHS.			RATIO OF DEATHS PER 1,000 OF POPULATION.			MEAN DEATH RATE DURING PREVIOUS FIVE YEARS.		
	Total number.	Rate per 1,000 of population.	Mean rate during previous five years.	In Municipalities and towns.	In Districts excluding towns.	Total.	In Municipalities and towns.	In Districts excluding towns.	Total.	In Municipalities and towns.	In Districts excluding towns.	Total.
Delhi	21,062	42.07	...	10,812	8,158	18,970	40.01	34.53	37.00	44.79*	47.13	45.51
Bengal	1,363,411	28.95	28.7	66,367	1,119,424	1,185,791	21.4	25.8	25.48	27.5	32.2	31.0
Bihar and Orissa	1,288,800	37.0	34.2	30,091	821,661	851,752	23.6	25.0	25.0	33.4	37.4	37.2
Assam	197,518	28.82	28.75	3,480	187,840	191,320	23.36	23.54	23.54	25.30	32.94	32.77
United Provinces of Agra and Oudh.	1,635,450	36.04	34.88	107,711	552,503	1,000,304	35.80	22.48	23.37	40.07	44.88	45.12
Punjab	885,567	43.2	30.3	67,418	567,444	634,862	32.50	30.77	30.94	35.20	36.55	36.45
North-West Frontier Province.	58,004	27.0	27.3	5,407	45,210	50,713	25.88	23.51	23.7	33.17	34.11	34.0
Central Provinces and Berar	634,862	45.63	38.08	43,750	381,033	424,783	32.20	30.34	30.53	43.45	59.19	51.8
Madras Presidency	1,358,748	33.1	23.0	136,317	772,508	908,825	26.4	21.6	22.2	29.8	26.1	28.1
Coorg	4,107	26.62	27.58	398	4,377	4,775	45.02	28.24	29.14	52.36	83.52	36.31
Bombay Presidency	681,010	35.58	30.95	112,711	383,533	496,244	30.11	24.87	25.90	43.10	39.00	39.7
Burma	310,409	20.81	31.10	43,142	182,741	225,883	35.45	10.02	20.87	42.81	28.02	27.9
Ajmer-Merwara	16,137	32.56	29.32	Not available	12,601	12,601	Not available.	25.62	Not available.	Not available.	44.3	
British India	8,466,086	35.06	32.47	627,708	5,304,534	6,036,931	29.24	24.59	25.00	37.85	36.50	36.8

* For Delhi Municipality.

66. *Indian States.*—Statistics for the few Indian States received have been summarised in the following table. The population concerned is just over 7,000,000 the majority of whom (5,859,952) are resident in Mysore State.

Indian States	POPULATION			BIRTHS.				Total deaths from all causes	Death rate
	Male	Female	Total	Male	Female	Total	Birthrate		
Sind State . . .	169,658	188,525	308,183	Not available		11,940	38·74	7,804	25·33
Jawher State . . .	25,926	23,736	49,662	935	875	1,810	36·45	1,419	28·57
Dhrol State . . .	11,609	12,031	23,640	Not available		739	31·26	391	16·54
Bhagat State . . .	5,662	3,843	9,505	81	72	153	16·10	156	16·41
Suket State . . .	29,014	25,914	54,928	Not available		944	17·19	657	11·96
Kalsia State . . .	Not available		57,371	946	815	1,761	30·69	1,509	27·35
Kolhapur State . . .	418,376	415,350	833,726	Not available		28,970	34·75	15,794	18·94
Mysore State . . .	2,965,541	2,874,411	5,859,952	54,566	51,288	105,854	18·04	94,267	16·09
TOTAL . . .	...	...	7,196,967	...	...	152,171	21·14	122,077	16·96

Mysore is the only State whose report is available for incorporation.

Births registered in the State were 105,854 or 18·04 per mille as against 104,948 or 17·91 per mille during 1922. The ratio was higher than that of the quinquennium by ·30. Urban areas showed, as the ratio of births 25·80 per mille as against 28·01 for 1922 ; rural areas showed 16·69 per mille.

Deaths. Total number of deaths was 94,287 with a ratio of 16·09 as against 14·52 in 1922.

Infantile mortality. The ratio of deaths among infants under one year of age was 88·05 as against 89·9 for 1922.

The principal causes of death were lung and bowel complaints.

Diseases in detail. Cholera showed 79 deaths : small-pox—2,427 deaths. 148,482 vaccinations were performed as against 117,356 in 1922. The compulsory Vaccination Regulation operated in 90 towns. 14,835 attacks of plague with 10,985 deaths (death rate 1·87 as against 1·53 in 1922) were recorded. 79,295 rates were destroyed in the Kolar Gold Fields ; and 126,630 inoculations were done as against 80,416 in 1922. The number of deaths from fevers was 41,966 giving a ratio of 7·67 as against 6·97 for 1922. Relapsing fever showed 1,476 attacks and 374 deaths. For dysentery and diarrhoea death ratio was ·54 against ·52 in 1922, while the death ratio from respiratory diseases was ·36 against ·37 in 1922.

School inspections.—364 schools were inspected and 14,262 of the children examined were given some form of medical relief.

The list in the table is the same as that in the report for 1922, and shows no additions. This is disappointing.

Attention is again called to the backward state of registration in most of these Indian States : and to the desirability of receiving centrally the public health reviews

and annual reports of the larger Indian States in time to incorporate them and publish them together.

67. **Registration.**—No report seems complete without a reference to the defects existent. Dr. Brahmachari's conclusions, which were quoted in last year's report, have been supplemented by those of other workers in different areas. These go to confirm the existence throughout British India of a percentage error of omission in vital occurrences which varies between considerable limits in accordance with the province and the methods applied to determine it. Death errors should, "a priori", be smaller, and my own experience of such investigations leads me to the same conclusion.

Habitual criticisms and admissions regarding the accuracy of our registration figures and of our methods of collection have led naturally to a note of depreciation and pessimism, especially amongst lay opinion, regarding their value and the possibility of their improvement. This is unfortunate, and I would desire to stress the opposite point of view. These figures are epidemiologically of the greatest value, especially our returns of total mortalities. They are, generally speaking, much more accurate and complete than are those of several of the Eastern European States as elicited during recent enquiries of the League of Nations; and, when interpreted by experts, can demonstrate much as the perusal of reports on many special enquiries on malaria, relapsing fever, kala-azar, and other epidemic diseases will bear out. We should therefore recognise their value and strive to improve the recording and checking machinery with a view to raising the standard of accuracy rather than deprecate their value and so render any improvement more difficult to accomplish.

Vital statistics were as usual checked by various agencies and the following facts emerge though the estimated percentages of error must be accepted somewhat cautiously in view of the differences in the methods of determination.

	Per cent. error.	
	Births.	Deaths.
North-West Frontier Province	3.9	1.3
United Provinces of Agra and Oudh (of those tested)	3.89	2.9
Madras Presidency	4.6	...
Bihar and Orissa (of those tested)	3.3 per cent. were the omissions for both births and deaths.	
Punjab (of those tested)	2.03 for males	1.20 for males.
	2.16 „ females	1.30 „ females.
“The revenue staffs investigation also detected.	2.84 „ males	1.37 in males.
	1.63 „ females	1.35 „ females.
Assam (of those tested)	6.75	4.68.

The percentage of omissions to the number verified in Assam was 6.85.

63 per cent. of the births in the city of Bombay were verified by the municipal nurses.

In the Punjab the Government decided to introduce in the districts of the Lahore Division an experimental system of registration of births and deaths under which this duty was transferred from the police to patwaris who were to be made responsible for the submission of vital statistical returns to Civil Surgeons. In some districts this system has proved satisfactory; but in others it has proved the reverse.

As was pointed out in the 1922 report, greater attention to registration is required, and much can be done by local Governments in this matter by giving the necessary stimulus to local authorities.

68. *Still births.*—These are still recorded over a very limited area in India.

The infantile death rate calculated on the births recorded during the year was 176, as compared with 175 in 1922, and 198 in 1921. The death rate for the year would appear to indicate an improvement in the economic conditions.

In British India as a whole 49·5 per cent. of the infantile deaths occurred during the first month of life against 48·8 per cent. in 1922. The actual number recorded was 735,968 or 87 per 1,000 live births, a rate again in excess of the total infantile mortality rate returned in England and Wales.

During the year under review much has been written and spoken throughout India on this question which is of such supreme moment to the national side of Indian life. Surely no words more pregnant and more convincing could have been addressed to the great Indian public than the words of Her Excellency the Countess of Reading at the opening ceremony of the Delhi Baby Week on 29th January 1924, and no indictment more grave than that contained in the speech of Sir Frederick Whyte at the prize giving during the same week. This is essentially a people's problem. An Indian Minister for Self-Government said lately "We are wholly responsible for the insanitary conditions prevailing in our houses." If he is correct—and there is no reason to doubt his statement—then I would ask you to remember that in England, as in many other countries, the great impulse towards betterment in public health came from private sources, from social workers, from doctors and others with no official positions. In fact the awakening of a public health conscience which has occurred in Great Britain during the last 50 years, though it has been guided by official advice and direction, has occurred largely by the work, effort, agency, and money of individuals and voluntary societies, and by the gradual enlightenment in such matters of the bulk of the population. We are still far from this state of affairs in India; but signs are not wanting that the process has begun and is extending rapidly. We should therefore encourage it in all the varied forms of activity which are now declaring themselves, be they Baby Weeks, Welfare Centres, Training Schools for Health Visitors; Hygiene Exhibitions; enquiries, or otherwise.

The number of infants dying within the first week has been ascertained in provinces other than Bengal, Delhi, Assam, and the Punjab, and is incorporated in the following table:—

Province.	Deaths under one week.	Ratio per 1,000 live births.	Percentage of deaths under one month.	Percentage of total infant deaths.
United Provinces	92,925	56·8	64·9	33·5
Bihar and Orissa	74,877	59·48	73·77	40·60
Madras	80,895	59·54	67·53	34·28
Bombay	26,323	38·6	58·09	24·1
Central Provinces	41,777	65·80	58·62	29·87
North-West Frontier Province	2,084	34·5	60·09	23·06
Burma	9,321	29·18	50·2	15·65
Coorg	452	107·70	76·87	49·56
Ajmer-Merwara	682	39·16	57·93	16·55
TOTAL	329,286	55·18	65·32	32·32

These figures have not varied very much from those of the previous year, though in the case of Coorg there is a definite reduction. The variation, though small considering the total numbers involved, shows the trend of the process at the moment and its seriousness.

In the report for 1922 a list of 23 towns with infantile mortality rates was furnished by way of adding "one more persuasive fact." The publication of these figures caused much comment especially in the realm of Child Welfare, Health Centre, and Baby Week organisations. I therefore include a similar list with figures for both 1922 and 1923 for comparison—13 show small increases, 8 show decreases, and 2 remain the same but Poona with a figure of 1,064 in 1922 has now fallen to 592.

Towns.	INFANT MORTALITY RATES.	
	1922.	1923.
Bombay	288	269
Calcutta	287	295
Madras	308	254
Rangoon	328	342
Howrah	250	264
Dacca	248	237
Poona	1,064	592
Sholapur	233	233
Surat	400	386
Ahmedabad	299	298
Karachi	252	218
Shikarpur	320	338
Cawnpore	451	405
Allahabad	244	260
Benares	264	298
Lucknow	280	288
Nagpur	275	251
Jubbulpore	228	283
Moulmein	212	245
Mandalay	310	324
Puri	335	335
Multan	257	285
Lahore	218	238

70. *Causes of Infant Mortality.*—I again quote from the report of the Executive Health Officer of Bombay City. The following table showing the causes of infant deaths is obtained from his report. Even though incomplete, it is eloquent of what is happening.

Disease.	1922.	1923.	Mean of five years, 1918-22.
Smallpox	8	27	107
Measles	6	27	108
Malaria	24	19	18
Remittent fever, and fevers not defined	122	131	297
Diarrhoea and enteritis	657	662	690
Dysentery	33	47	61
Infantile debility and malformations including premature birth.	3,681	3,767	3,769
Respiratory diseases	2,154	2,388	4,009
Convulsions	1,086	1,106	...

Accurate investigation of proximate causes of this mortality is imperative if we are to progress. As has already been pointed out, both money and workers, more especially trained workers under various voluntary societies, if properly directed, are essential and desirable. These can and should work side by side with more elaborate scientific enquiries by medical workers, as they can, by simple precept and example, teach the fundamentals of child management and hygienic environment to the poor in their own surroundings, and so in time influence favourably the situation; but continuity and multiplication of effort are essential for success on a scale large enough to affect the population generally, and the movement must obtain adequate support from the people themselves.

71. *Maternal death rate.*—The maternal death rate is assumed to be that occurring within 14 days of child birth; and, on this basis, the following figures and notes are valuable if we remember that the maternal death rate is not accurately registered.

Province.	Areas.	Maternal death rate per 1,000 births.
United Provinces	All towns over 10,000	6.4
	Agra	8.3
	Cawnpore	7.1
	Allahabad	8.1
	Benares	7.1
	Lucknow	10.0

Province.	Areas.	Maternal death rate per 1,000 births.
Delhi Province . . . . .	.....	5.0
Assam	All towns over 10,000	7.6
Bombay Presidency	Rural areas	5.5
	All towns	12.0
	Poona city	26.6
	Sarat	23.9
	Ahmedabad	12.1
	Karachi	13.9
	Hyderabad	11.4
	Larkana	61.2
	Sukkur	25.9
	Shikarpur	124.9
Central Provinces	Rural areas	4.4
	All towns	7.4
	Nagpur	5.4
	Jubbulpore	5.4
	Burbanpur	11.7
	Raipur	21.3
	Karanja	34.0
Madras Presidency	Rural circles	1.0
	All towns	9.6
	Conjeeveram	10.4
	Coimbatore	13.2
	Guntur	19.1
	Ellore	44.1
	Bezvada	21.8
	Madras city	14.7
	Madura	12.3
	Cuddalore	11.5

Province.	Areas.	Maternal death rate per 1,000 births.
Madras Presidency— <i>contd.</i>	Kumbakonam	15.4
	Tanjore	16.9
	Negapatam	27.5
	Palani-cottah	23.0
	Trichlappoly	14.2
	Vizagapatam	29.1
Burma	All towns	10.7
	Rangoon town	8.4
	Basscin	12.8
	Moulmein	16.7
	Mandalay	11.0
	Myingyan	44.9
	Bombay City	4.6
Calcutta	4.3	

It is well to realise once again how closely the maternal death rate and infantile mortality are related, and how the former reacts on the latter. If we reduce the former then, other things being equal, we shall reduce the latter.

In the United Provinces the maternal death rate per 1,000 for the year under report compares favourably with that for 1922; in Delhi the rate is less than in 1922; in Assam (registered in 15 towns) the rate was 7.6 against 12.1 in 1922. In Bombay in 1923 the rates for rural areas and all towns were 5.5 and 12 as against 6 and 11.1 respectively for 1922. In the Central Provinces in 1923 the rates for rural areas and all towns were 4.4 and 7.4 as against 4.4 and 9.2 respectively for 1922. In Madras in 1923 the rates for rural circles and all towns were 1.0 and 9.6 as against 1.0 and 9.3 respectively for 1922. In Burma the rate for all towns in 1923 was 10.7 against 10.2 for Lower Burma and 10.7 for Upper Burma in 1922. The Associations for Maternity and Child Welfare work may have contributed to some extent towards the improvement in these conditions.

Bombay Presidency—There were altogether 4,400 deaths against 4,203 in 1922. In Bombay City 95 deaths were recorded during the year against 81 in 1922. Taking the Presidency as a whole, as the result of child bearing, one woman is said to have died to every 155 live births as compared with one to 148 in 1922. The urban and rural figures are one in 83 and 182 respectively against one in 90 and 166 in the preceding year. Amongst collectorates the rate was greatest in Kanara where a mother died for every 57 births registered. In Bombay City one mother died for every 217 births, as compared with one in 248 in 1922. Amongst towns Ahmedabad showed a figure of 82.

72. *Maternity and Child Welfare work.*—In view of the importance of this side of public health work and of the interest and enthusiasm shown throughout India by the lay public and the encouragement given by the public press, a more detailed account than usual of the various provincial activities is set forth in this report. A much needed stimulus to the whole movement has been furnished through the active personal interest taken in the problem by Her Excellency the Countess of Reading whose assiduous endeavours, by promoting Baby Week organisations and their propaganda and by establishing teaching centres, have contributed in no small measure to the enthusiasm already referred to.

Calcutta.—The four Lady Health Visitors and 16 midwives employed visited 3,870 maternity cases, one-fifth of the babies born in Calcutta being delivered by the Corporation midwives. Only 3 maternal deaths occurred among these cases. In view of the fact that most of the women were delivered under extremely unfavourable conditions the Lady Health Visitors are to be congratulated on such results. Ninety-four difficult and complicated cases of various kinds were removed to the hospitals.

The United Provinces of Agra and Oudh.—The organising Secretary in the United Provinces reports that two meetings were held in June and September 1923.

At Allahabad midwives have been appointed in different localities to visit the homes of expectant mothers and to attend to confinement cases, their other duties being to explain to the public the measures to be adopted in order to combat the high infantile mortality. Two sub-assistant surgeons have been appointed to supervise the work of these midwives. Efforts to improve the standard of indigenous dais are also being made by two resident midwives and the Health Visitor for these provinces whose headquarters are at Allahabad.

In Pilibhit there is a Maternity and Child Welfare Centre and a resident midwife works there under the municipality and made 276 visits during the year.

Muzaffarnagar has a midwife.

At Bareilly Mrs. Stubbs' Maternity and Child Welfare Society is doing good work. Six hundred and forty cases were delivered by the staff there and the outdoor attendance was 239 during the year.

At Muttra the Mission Church is doing similar work.

At Bahraich a midwife has been appointed to attend normal labour cases free of charge.

There are centres for improvement of indigenous dais at Lucknow, Agra, Allahabad, Meerut and Gonda. The Municipal Board at Agra has started a Baby Clinic at its own expense. At each centre a resident midwife is working in connection with this scheme, and centres were instructed to hold their "Baby Weeks" at their own convenience.

The scheme for the training of midwives introduced at Gorakhpur, Fyzabad, Meerut, Aligarh, Moradabad, Allahabad, Bareilly, Benares, Cawnpore and Agra is making steady progress. Sanction was accorded to the training of six midwives at the Dufferin Hospitals at Allahabad, Benares and Lucknow, of four at Cawnpore, of two in each of the remaining places, and of four at the Women's Medical School and Hospital at Agra. In all 36 probationer midwives have been under training, of whom six were discharged or left, being unsuitable, and 14 passed out. The remaining 16 are still under training. At Shahjehanpur indigenous dais are trained by the sub-assistant surgeon in charge of the Dufferin Hospital. Twenty-three were admitted out of whom 19 passed and 4 are still under training.

Five midwives, over whom are two health visitors, are employed in Lucknow. The number of labour cases conducted by these was 376 and of expectant mothers seen was 452.

This is a big record of developmental work since last year and bids fair to have a far reaching effect. If, as one hopes, it is a prelude to what is to come, then we may hope for much in this province.

Burma.—The Government of Burma has continued to support the Infant Welfare movement and has assisted Societies at Rangoon, Mandalay, Moulmein, Taunggyi and Meiktila.

At Pyapon the midwife attended 86 of the 201 births in the town.

At Rangoon nine nurse midwives, a matron and a lady doctor were employed. Midwives attended 1,409 confinements, 607 boys and 604 girls were born alive and there were 47 still births and 156 miscarriages. The Society's return shows 60 infants dying before the end of the first year of life.

At Mandalay the number of cases attended by the Society's Lady Superintendent and 4 midwives was 572 as against 484 last year. 526 were live births of which 69 infants died while 17 cases of difficult labour were attended.

At Moulmein 288 confinements with 271 live births, 11 still births, and 6 abortions were attended by the Society's midwives. Three of the mothers and 19 of the children under one year are reported to have died.

At Taunggyi the number of confinements was 59, 23 of which were treated in the Maternity Home and 36 in their homes. At Meiktila the midwife attended 226 cases out of 279 births.

This activity augurs well for the future.

Madras Presidency has always been in the forefront in maternity work. The total number of deaths registered under maternal causes in districts including municipalities was 2,892, an increase of 279 over the number registered in 1922. The maternal death rate for municipal towns was 14.8 per 1,000 births. The rate for rural towns was only 1.0. Comment is unnecessary.

A memorandum on the following points was prepared and circulated to the various local bodies: (1) training and control of midwives, (2) training of health visitors, (3) opening of ante-natal clinics and child welfare centres, (4) provision of hospitals for children, (5) provision of maternal labour wards, and (6) propaganda.

Activities in 49 different places are described in detail by the Director of Public Health, and some of the more important are appended. Conjeevaram has 11 beds for maternity cases and a lady medical officer in charge of them; Negapatam has four trained dhais; Kodaikanal has a nurse; Salem has one midwife and proposes to entertain an additional one; Coimbatore has raised the number of midwives to four. Ootacamund has one municipal and eleven other qualified midwives; there are two *ante* and *post* natal centres; and a trained lady health visitor is attached to the child welfare centre. Cannanore has, since December 1923, a Maternity and Child Welfare Association consisting entirely of women, with a lady apothecary as its Superintendent. Bellary has seven dhais and a midwife; Tuticorin has a qualified midwife who is also Health Visitor.

In a general review of the situation the Director of Health shows that in the 26 districts of the Presidency 459 qualified midwives conducted 39,355 cases or 3 per cent. of the total births and in 81 municipalities 250 qualified midwives conducted 25,719 cases or 23 per cent. of the total births. He animadverts on the inadequacy of the material relief now afforded by local and municipal bodies, and suggests the steps necessary and the onus lying on local bodies to encourage voluntary effort. In this I am in agreement with him.

Central Provinces and Berar.—Deaths from child birth in the province were 2,984 of which 462 were registered in municipal and other towns and the remaining 2,522 in villages. In Nagpur city where a second welfare centre with a health visitor and one nurse was started in September 1923, the following results have been achieved :

	Total births.	Infant deaths under one month.	Mortality rate.
Entire town	6,814	955	140.14
Cases visited	2,465	241	97.76
Cases not visited	4,349	714	163.89

The mortality rate during the first month of infancy among visited cases was 97.76 per 1,000 births against 163.89 for unvisited infants. Allowing for other factors, these health visits have helped to save some of the 66 lives per 1,000 births saved during this period. Out of the 241 deaths among visited cases 93 were premature births. Maternal deaths numbered nine, the causes being phthisis, jaundice, fevers, and diarrhoea.

At the infant clinic 3,189 babies, who had outgrown the period of health visiting, attended during the year ; 535 babies came for weighment compared with 116 during 1922. Free milk was supplied. Classes were held for the training of dhais, the number so trained being 35.

At Jubbulpore 3,039 houses in which births took place were visited and 82 confinement cases attended. At the Elgin Hospital 50 cases of labour and at the Victoria Hospital 19 cases were conducted. At Hoshangabad a midwife inspected 545 babies and attended 34 confinement cases ; at Harda the female sub-assistant surgeon inspected 168 and the midwife 102 babies ; at Burhanpur a maternity ward was opened ; at Raipur a midwife conducted 39 cases and visited 1,420 mothers after confinement ; at Yeotmal lectures on hygiene and cleanliness were delivered in the town ; in Nagpur city a Health Week and Baby show were held.

Bombay Presidency.—There were nine Sanitary Associations working in the Presidency.

Karachi Association.—A health week was held and a maternity home was opened during the year. 1,128 maternity cases were conducted by the midwives of the Association as compared with 881 in the previous year. 5,058 house to house visits were paid by the two lady visitors. The Creche was attended by 14,935 children. In Hyderabad 22 dhais attended the class for training dhais during 1923.

Broach Association. Three health shows were organised.

Ahmedabad held a Health week in October.

Bombay Sanitary Association. For details of the various activities of this Association the administration report of the Municipal Commissioner must be consulted ; but the record is one of steady improvement in organisation and increase in voluntary effort. It covers the fields of voluntary Welfare Centres, Infant Milk Depots, Municipal Maternity Homes, municipal nurses activities. Further relevant facts bearing on Maternity and Child Welfare work here and elsewhere will be found in the next paragraph on municipalities.

73. *Municipalities and their maternity and child welfare activities.* The facts and observations recorded in this paragraph represent a few of the more important aspects of this work in the municipalities specially noted on by municipal medical officers of health and have therefore a general interest.

(a) *Central Provinces.*—Nagpur. The infant mortality rate was (255·8). The percentage of infant mortality to total mortality of all ages was 391. 54 per cent. of infant deaths occurred within the first month and, of these deaths, 70 per cent. were recorded within a week of birth.

Itwari Welfare Centre which was started in 1921, has a Lady Superintendent, three Health Visitors, and occasional help from the Sisters of Mercy, while 35 dhais helped to report births and called on the Health Visitors' assistance. Sukiawari Centre has one Lady Superintendent and one Health Visitor. From these centres 2,465 new cases were visited, while 1,207 births were reported by dhais.

(b) *United Provinces.*—Dehra Dun. Infantile mortality amounted to 277; but no steps were taken for the training of indigenous dhais.

Meerut. Infantile mortality was 708, the cause of this increase being chiefly measles and diarrhoea.

Muttra. Total births were 2,473, total deaths 2,023, while 612 children under one year died. This being a great pilgrim centre much attention was given to water supply, and a water laboratory was opened.

Agra. Total births were 9,448, total deaths were 6,256 (38·20 per mille), and the deaths among infants under one year were 2,053 giving an infantile mortality rate of 217·29.

Benares. Total births were 9,695, total deaths were 10,517, while deaths under one year were 2,890, giving an infantile mortality rate of 285·71.

Cawnpore. Total births were 7,773 and deaths under one year 3,849.

Lucknow. Birth rate was 47·66 per mille, the infantile mortality rate was 284·9 per 1,000 of births and total death rate was 40·07 per mille. The year was practically free from epidemics.

(c) *Bangalore Civil and Military Station (1923-24).* Birth rate was 33·35 per mille, still births 176, total mortality 4,048 (or 34·03 per mille). The infant mortality rate was 306·88, premature birth and inanition accounting for over 50 per cent. of this. The milk problem was acute. A Baby Week was held; four midwives attended 840 maternity cases; two dhais were employed.

(d) *Burma.*—City of Rangoon. The birth rate was 17·41 per mille and the death rate 33·89 per mille. For every three babies born approximately one dies before it reaches one year of age.

Mandalay. 6,696 births were registered, the increase being due to the more careful work of Registrars and to better organisation. 74 prosecutions were made for non-registration of births. The percentage of registered births to total infant deaths was 73·6. Total mortality ratio was 51·05 per 1,000. There were 2,185 deaths amongst infants of one year, and under one year, the infantile rate being 318·8. 10·43 per cent. of total infant deaths occurred during the first week of infant life.

Reports on the working of Municipal Committees in Burma except Rangoon (1922-23) show that the detection of unregistered births leaves room for improvement; still births are often not reported.

(e) *Bombay Presidency.*—Bombay. The death rate was 31 per 1,000 living and 8,632 infants under one year died, the infantile mortality being 411. There were 1,942 still births. The principal causes of infantile mortality were small-pox, measles, malaria, diarrhoea and enteritis, dysentery, infantile debility, and convulsions.

The measures being adopted for prevention of infantile mortality are: visits by municipal district nurses for the purpose of getting into touch with prospective mothers and for discovering cases of sickness among women and children and unvaccinated children, attendance on confinements, provision of necessaries and comforts during the lying-in period and of maternity homes, infant milk depots, and infant welfare depots.

Twenty nurses, who are all qualified midwives, were employed. They persuade prospective mothers to go to maternity homes, but when this is not taken advantage of they attend on the women in their own houses providing them with bedding for their confinement, and food, in the shape of milk and bread, during the first days of puerperal period. They made 54,404 visits, inquired into 5,474 cases of ordinary sickness, reported 433 cases of infectious diseases and 1,144 deaths in the female population of the city. They also attended 1,914 confinements and verified the reports of the birth karkans on 7,016 births. The three municipal maternity homes admitted 1,773 cases, of whom 1,592 cases were confined. Two infant milk depots distributed 30,216 seers of milk.

Nine voluntary welfare centres exist, and through them the Society provides advice and instruction to mothers as to infant management, medical aid to infants, and a staff of trained nurses for visiting the houses of infants. Each centre is in charge of a trained nurse and a midwife who supervise the milk distribution and assist the lady doctor. A Health Visitor, who is a trained nurse-midwife, is attached to each centre. The number of new admissions at the nine centres was 3,383 and of attendances for milk, medical treatment and advice was 214,153, while 62,600 seers of milk were sold at one anna a seer and 16,874 seers given free. This is a good record of work and augurs well for the future.

Poona. The registration of births is recognised as defective, though that of deaths is thought to be reliable. Birth rate was 10·08 per mille; still births numbered 179; total mortality rate per 1,000 was 45·28; 1,642 deaths,—a large infantile mortality,—occurred among infants under one year.

Ahmedabad. Measles and small-pox were epidemic, and deaths from fever were high. The birth rate was 42·50; the number of still births 223; the total death rate 40·06 per mille; and infantile mortality rate 282·77. 32·29 per cent. of the total mortality was among children under one year.

¶ Six midwives were engaged; but 10, or one for each ward, are needed. These midwives made 1,765 new visits and conducted 994 deliveries, amongst which were 56 abortions, 11 miscarriages and 39 still births. The bulk of infantile mortality in artificially fed infants was ascribed to the deficient, dirty, and dear milk supply. Licensing and registration of milk shops were advocated. There were seven creches in the mills. Food inspection Bye-laws regulating milk sheds, milk shops, and herding of animals are under consideration.

Hyderabad (Sind). The birth rate was 39·59; there were 104 still births, and infantile mortality was 687; but small-pox was prevalent and accounted for some of this. Quarterly inspections of boys schools were made by municipal medical officers and of girls schools by the Lady Dufferin Hospital doctor. These showed:

Cases.	During 1st quarter.	During 4th quarter.
Defective teeth	318	189
Bad throat	247	176
Rickets	7	2
Spleen	47	52

605 intimation cards were issued to parents and guardians and 527 cases were treated free. This is a good beginning.

(f) *Madras Presidency*.—District municipalities in the Presidency of Madras (1922-23) recorded an average birth rate of 35·04 per mille and improvement in registration was noticeable. Periyakulam headed the list with 53·8 and next came Chingleput with 49·9. The midwives employed whose numbers rose by 9 to 143, averaged 97 cases each. In addition 160 midwives were practising privately. Mangalore had 9 municipal and 12 private midwives, Madura 8 and 1, Trichinopoly 6 and 18, Nellore 4 and 13, Vellore 4 and 8, Guntur 1 and 12, respectively. The percentage of births attended by qualified midwives exceeded 50. The death rate was 29·2 per mille against 27·2 in 1922.

Madras City.—Number of births registered during the year, exclusive of still births, was 22,975, being 1,325 more than in the previous year, with a ratio of 43·6 per mille against 41·1 in 1922. The Mohammedans returned the highest birth rate of 50·1 and the Europeans the lowest 27·9.

Still births were 1,312 against 1,274 in 1922. The number of still births has been on the increase since 1918 due to poverty and disease in the father or mother, or both. A high still birth rate is commonly associated with a high maternal mortality rate and infant death rate.

The total deaths registered exclusive of still births was 19,933 against 22,475 for 1922, with a ratio of 37·8 per mille against 42·7 for 1922. Women between the ages of 15 and 40 died in slightly larger proportion, due to risks attending on child birth.

As accurate registration is the first step towards attacking this problem; it is interesting to note the chain of responsibility for information regarding births and deaths.

As regards deaths, every medical practitioner has to report to the health authorities the occurrence of death within three days, every householder has to register deaths at an office of the medical registrar within 36 hours, every hospital issues reports, peons attached to burial grounds are required to send daily communications, and sanitary inspectors make reports of deaths with special reference to infectious diseases.

As regards births, those occurring in hospitals are reported direct by the hospital authorities. Of those occurring in private houses a small proportion is reported by the medical practitioner or midwife who attended at the time of delivery. Difficulty in accurate registration is met with largely amongst these which number more than 50 per cent of the total births. The number of births verified was 17,217; and of these 20 per cent died.

Sixteen health visitors paid 50,906 visits to the houses of the people and registered 3,501 prematernity cases, while the midwives paid 64,219 visits.

(g) *Punjab*—

Lahore. With a total mortality rate of 42·7 per mille the infantile mortality was 238·06 per mille. 1,550 confinement cases were attended by midwives and the number of dhais on the register averaged 318. The average daily attendances at the Baby Clinic was 36 and the work of the lady health visitors and dhais was thought to be proving useful.

Rawalpindi. The birth rate was 42·6; still births numbered 133; the death rate was 44·1, and infantile mortality rate was 240·8 per 1,000. There was only one health visitor in the town, and her duties were to visit mothers after confinement, to supervise as many confinement cases of dhais as possible, to train dhais for the indigenous dhais examination, and to attend at the Baby Clinic. Fifteen dhais were under training.

Simla. Birth rate was 15·51 per mille and death rate was 11·00. Crude infant mortality among Indians was 240 per 1,000 births. At the Lady Chelmsford Maternity and Infant Welfare Centre 221 births were reported by the lady health visitor, and approximately 60 per cent of the births were attended by fully trained dhais. An average of 13 dhais attended the training class. School inspection was

instituted, and each child was provided with an index card. Of 1,636 children examined 1,111 were recommended for some form of treatment.

(h) *Delhi Province*—

Delhi. Birth rate was 46.65; still births numbered 178; infantile mortality was 226.42, total death rate was 42.89. One fifth of the infants born died before they were a year old, and 86 women died within a month of childbirth.

Registration of births and deaths was said to be unsatisfactory. The Maternity and Infant Welfare staff consisted of two European lady health visitors under whom were two Indian lady health visitors and two trained dhais. Three Baby Welcome centres and clinics exist of which two are well equipped. Each has a matron, a nurse, and a few menials. The Indian health visitors paid 961 new visits, and attended 109 midwifery cases, visiting 430 houses wherein were gynæcological cases. Sixty-nine dhais were undergoing training.

These extracts, taken at random from the reports of the various municipal administrations, indicate to some extent, though slightly, how far the leaven of maternity and child welfare is penetrating the public conscience in the different provinces. The movement has come to stay. It must develop before great progress in reducing the infantile mortality can be made or expected, and it is for Indians themselves to promote and carry forward this developmental process if they wish to participate in the results on a scale commensurate with the importance of the subject.

74.—*Chief Causes of Mortality*.—The numbers of deaths registered under each of the chief compilation headings are given in the tables for British India and for those Indian States which have furnished returns.

British India.

Province.	CHOLERA.		SMALL-POX.		PLAGUE.		FEVERS.		DYSENTERY AND DIARRHOEA.		RESPIRATORY DISEASES.		ALL OTHER CAUSES.		
	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	
Delhi . . .	12	'02	67	'13	2,705	5.58	9,694	19.86	424	'84	4,689	9.86	1,380	2.67	
Bengal . . .	41,483	'9	4,236	'1	98	'002	902,795	18.6	21,519	'5	26,655	'6	182,005	3.9	
Bihar and Orissa	8,198	'2	3,161	'09	28,911	'8	599,940	17.6	18,788	'5	6,161	'1	136,793	5.4	
Assam . . .	3,728	'54	3,218	'47	...	...	106,347	15.52	0,109	1.33	6,830	'99	32,105	4.08
United Provinces of Agra and Oudh.	2,561	'06	747	'02	74,187	1.63	760,040	17.19	10,878	'24	26,108	'57	165,744	3.65	
Punjab . . .	11	0.001	2,140	0.10	60,086	2.44	420,808	20.40	11,012	0.57	38,434	1.87	112,181	5.47	
North-West Frontier Province.	2	0.001	94	0.04	8,743	1.75	30,881	15.67	196	0.09	1,947	0.91	4,850	2.28	
Central Provinces and Berar.	1,090	'08	275	'02	15,867	1.14	233,575	16.79	24,321	1.75	35,023	2.62	114,038	8.23	
Madras Presidency.	5,169	'01	24,434	0.8	12,110	0.8	318,172	7.8	60,823	1.6	55,951	1.4	482,666	10.5	
Coorg . . .	...	...	18	0.11	...	...	8,882	23.60	104	0.03	191	1.17	580	3.54
Bombay Presidency.	9,221	0.48	2,811	0.15	39,741	1.76	106,231	10.24	22,238	1.16	84,334	4.40	147,668	7.70	
Burma . . .	1,488	'14	2,840	'26	7,000	'70	78,639	7.27	6,685	'62	10,854	1.00	117,775	10.58	
Ajmer-Merwara .	9	'12	42	'08	5	'01	9,805	17.78	201	'53	199	'40	2,370	4.77	
British India	1922	181,878	'50	40,836	'17	77,015	'32	3,689,066	16.28	177,852	'74	290,638	1.20	1,402,401	5.81
	1924	78,002	'30	44,084	'18	220,140	'95	3,700,298	15.35	180,458	'77	297,395	1.28	1,500,575	6.21

Indian States.

Indian States.	CHOLERA.		SMALL POX.		PLAGUE.		FEVERS.		DYSENTERY AND DIARRHOEA.		RESPIRATORY DISEASES.		ALL OTHER CAUSES.	
	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.	Total deaths.	Ratio per 1,000.
Jind State . . .	2	'008	100	'33	2,271	7'37	5,285	17'15	16	'05	17	'06	113	'37
Jawhar State . . .	...	...	3	'00	...	...	1,325	20'08	...	...	...	...	61	1'83
Dhrol State . . .	...	...	12	'51	...	...	318	13'45	...	...	14	'50	47	1'09
Bhagat State . . .	...	...	...	...	...	...	135	14'20	1	'11	1	'11	19	2'00
Saket State . . .	...	...	...	...	...	...	573	10'43	34	'02	20	'36	30	'56
Kalsia State . . .	1	'02	17	'30	...	...	1,450	25'43	5	'00	20	'51	58	1'01
Kolhapur State . . .	74	'00	20	'02	150	'50	0,734	11'68	1,102	1'43	1,053	1'26	3,532	4'27
Mysore State . . .	70	'01	2,437	'41	10,085	1'87	44,000	7'67	3,201	'54	2,123	'36	30,465	5'19
Total . . .	156	'03	2,570	'36	13,445	1'80	63,705	8'66	4,449	'62	3,267	'45	34,385	4'77

75.—Fevers.—In British India 3,706,293 or approximately 61 per cent. of the total deaths recorded were attributed to fevers against 3,689,036 for 1922, or a ratio per mille of 15'35 as against 15'28 in 1922. An attempt to differentiate this fever group has been made in the past and is still continued. Its inaccuracies and fallacies have been pointed out; but it is the beginning of an attempt to get more reliable data and should therefore be encouraged wherever it is attempted. The accompanying table gives the results which are interesting even if they cannot be made much use of yet.

	Enteric fever.	Malaria.	Relapsing fever.	Kalaazar.	Measles.	Other fevers.
Bengal . . . { R . . .	5,703('1)	532,325(12'2)	6,253('1)	3,467('1)	1,288('03)	340,023(7'9)
. . . { T . . .	074('3)	7,574(2'4)	87('02)	1,008('3)	186('1)	10,264(3'3)
Assam T . . .	16	342	1	236	7	309
United Provinces . . { R . . .	12,300('29)	643,110(15'18)	225	68	2,055('06)	72,731(1'72)
. . . { T . . .	1,021('64)	22,200(7'39)	25('01)	23('01)	2,431('83)	22,030(7'34)
Bombay { R . . .	1,734('11)	31,735(2'06)	6('00)	...	3,446('22)	133,264(8'04)
. . . { T . . .	542('14)	3,222('86)	13('00)	1('00)	3,058('62)	16,217(4'87)
Burma T . . .	252('21)	2,258(1'83)	...	...	90('07)	2,561(2'11)

R—rural areas.

T—towns.

The figures in brackets represent the death rates.

76.—Malaria.—Fever figures do not represent malaria as has often been pointed out. Careful verification of deaths in selected areas has led to correction factors being

evolved which allow of the epidemiologist reading into such figures as are recorded much that at first sight would appear to be impossible or unjustifiable. Thus, broadly speaking and subject to variation in different areas, we may take it that $\frac{1}{3}$ rd at least of recorded "Fever" deaths are due to true malaria. In the same way with other diseases, a corrective factor can be evolved which is of great value.

The following table which gives the number of cases treated for malaria at the hospitals and dispensaries in 1923 shows an increase over that for 1922, though Assam, Central Provinces, United Provinces, Bombay, North-West Frontier Province and Burma all show decreases.

		STATE PUBLIC, LOCAL FUND AND PRIVATE AIDED DISPENSARIES.		STATE SPECIAL AND RAILWAY DISPENSARIES.		Private non-aided Dispensaries.	TOTAL.	
		Indoor.	Outdoor.	Indoor.	Outdoor.			
Bengal . . .	{ 1922	7,391	1,545,878	8,116	129,786	349,748	2,030,919	1922
	{ 1923	6,657	1,595,849	8,280	140,627	384,571	2,135,934	1923
Punjab . . .	{ 1922	5,318	640,327	2,637	146,687	15,031	810,195	1922
	{ 1923	7,209	953,903	3,340	214,402	17,823	1,196,677	1923
Madras . . .	{ 1922	7,610	460,163	1,218	84,837	37,816	541,644	1922
	{ 1923	8,369	528,406	953	36,625	36,724	611,277	1923
Assam . . .	{ 1922	2,887	319,759	3,807	26,106	9,876	864,427	1922
	{ 1923	2,422	303,145	2,381	26,558	9,140	333,646	1923
Bihar and Orissa . . .	{ 1922	3,633	652,010	2,103	79,092	128,878	865,716	1922
	{ 1923	3,624	719,302	2,553	80,577	126,452	932,508	1923
Central Provinces . . .	{ 1922	2,610	272,885	1,429	55,799	84,525	367,248	1922
	{ 1923	2,324	239,079	1,191	49,458	34,578	326,630	1923
United Provinces . . .	{ 1922	6,265	1,058,180	7,319	100,055	84,887	1,256,706	1922
	{ 1923	5,546	845,792	5,629	88,445	68,554	1,013,966	1923
Bombay . . .	{ 1922	7,980	461,826	5,505	90,397	260,576	826,284	1922
	{ 1923	7,158	434,088	5,141	81,746	231,449	759,582	1923
North-West Frontier Province.	{ 1922	1,774	205,359	5,800	47,567	6,591	267,091	1922
	{ 1923	1,645	187,472	5,403	53,195	7,872	255,587	1923
Burma . . .	{ 1922	12,460	247,260	6,795	30,485	Nil	297,000	1922
	{ 1923	13,468	239,823	6,709	31,414	Nil	291,414	1923
TOTAL	{ 1922	57,923	5,863,647	44,929	742,813	917,928	7,627,240	1922
	{ 1923	58,422	6,036,859	41,530	803,247	917,163	7,857,221	1923

Assam records a decrease of about 30,000 in the numbers treated for malaria in 1923 as compared with 1922.

Bihar and Orissa shows an increase of 60,000 in the number of cases treated as compared with previous year. The disease is endemic throughout the province. It was prevalent in epidemic form in Balasore and Cuttack Districts, and very prevalent in Singbhum and parts of Ranchi District, though the year on the whole was a healthy one.

Madras showed an increase of 70,000 in the number of cases treated.

Punjab showed an increase of 386,000 in the number of cases treated. There was a relatively severe and wide spread epidemic of malaria in the districts of Karnal, Ambala, Ludhiana, Ferozepore, Jullundur, Hissar. This epidemic was responsible approximately for 50,000 deaths. Lieutenant-Colonel Gill's method of forecasting malaria epidemics was given a trial. This method showed that the forecast in its positive aspect proved absolutely correct except for one district, *viz*, Lyallpur; in its negative aspects the forecast was inaccurate as regards two districts inasmuch as they displayed a malaria mortality rate which entitled them to inclusion in the list of districts in which a malaria outbreak was to be expected. Lieutenant-Colonel Gill claims to have demonstrated that forecasts of considerable accuracy can be issued on the 1st of August and 1st of September respectively, thereby enabling the medical department to take timely measures in threatened areas. Though great difficulty was experienced in obtaining early statistical information regarding rainfall from individual districts steps have been taken to eliminate this difficulty in future. Further, by this method, medical officers of health, with their own investigations, should be in a position to know on the 1st of August the probability or otherwise of an outbreak of malaria in their respective districts. These forecasts will be carefully watched in future.

Central Provinces and Berar showed a decrease of 40,618 in the number treated.

United Provinces showed a decrease of 240,000 approximately in the number treated.

Bombay Presidency showed a decrease of 66.70% in the number treated. The highest rural death rates from malaria were recorded for Sindh. Excluding Sindh the malaria death rate was .90. The urban and rural rates were .86 and 2.05, respectively. 84,957 deaths were recorded. Quinine and anti-malarial measures were stated to have been used in all the areas.

77. Anti-malarial campaigns. The United Provinces investigations, which were begun in 1909 and 1910 in the Terai and Bhabar Estates were continued. In Saharanpur, which was the first town in this province to be malarially surveyed as far back as 1910 and in which definite anti-malarial works were carried out the reduction in endemic malaria was stated to be from nearly 80 per cent. to 7 per cent. A complete malarial survey of Bareilly was carried out in 1922-23, and of Pilibhit in 1923. Proposals to extend anti-malarial operations in the United Provinces and to train all medical officers of health in anti-malarial work are under the consideration of Government.

Burma.—In Kayukpyu the work done consisted partly of reclamation of low-lying marshy land and partly of drainage and canalisation of swamp. All paddy cultivation within Municipal limits has been stopped and large areas of paddy lands within and immediately adjoining the town limits have been purchased by Government and some of them have been let out for dry cultivation. Continuity of control and supervision of the measures is a very important factor. 242 of the 446 children examined in February 1924 had enlarged spleens (54.26 per cent.). Splenic indices recorded in February 1924 differ from those in February 1912 by a decrease of 14.94 per cent.

In *Bihar and Orissa* the Director of Public Health makes some pertinent observations regarding the general value of quinine, and of draining, oiling, and filling in, as general measures for eradicating malaria under present conditions.

In *Madras Presidency* an intensive anti-malarial campaign was carried out in South Arcot District.

In *Assam* anti-malarial operations were carried out at Pasighat, Luming and Haflong. A detailed mosquito survey with reference to prevention of malaria in the Shillong Municipality was made.

78. *Quinine*.—It is difficult to estimate accurately the exact consumption of quinine, as much which is issued must remain in stock. Its present high price is militating against its freer use throughout the country. The following facts are only of interest in so far as they show how little value can at present be attached to any results prophylactic or other, from this drug when we consider the numbers at risk, the corrected figures for those who died of malaria, and the probable estimate of those who suffered either with or without quinine treatment.

In *Bengal* nearly 12,000 lbs. of quinine were issued during the year against 8,073 lbs. in 1922. The increased consumption is ascribed to the reduction in price and the increased prevalence of malaria in certain districts.

In *Bombay Presidency* 1,867 lbs. of quinine were sold or distributed free throughout the Presidency against 1,687 lbs. in 1922.

In *Bihar and Orissa* 1,027.6 lbs. were sold as against 639.1 lbs. in the previous year.

In the *United Provinces* quinine worth Rs. 7,784 was sold by Post Offices, vaccinators, landlords and Court of Wards against that of a value of Rs. 14,293 in 1922. The Aligarh Jail issued 225 lbs. of quinine for the use of travelling dispensaries, 153 lbs. for free distribution in districts, 3 lbs. for schools in Saharanpur and Ghazipur, and 2 lbs. for prophylactic use to the jails—total 383 lbs.

In the *Punjab* extra stocks of quinine were obtained, and 385 lbs. of the drug in powder form and 298,650 tablets were distributed in the affected areas.

In *Burma* 4,001,953 five-grain and 520,323 one-grain tablets were manufactured as against 4,566,971 five-grain and 1,597,034 one-grain tablets in 1922. In addition 2,411,079 four-grain tablets were also manufactured during the year. 3,778 lbs. of cinchona febrifuge were used in the manufacture as against 3,221½ lbs. in 1922. Issues amounted to 4,032,178 five-grain, 1,195,800 four-grain and 608,962 one-grain tablets. Free issues to the extent of 1,148,800 grains were made in 18 districts.

79. *Relapsing fever*.—In North-West Frontier Province this disease was shown to be increasingly prevalent. This is partly no doubt due to more accurate diagnosis. In Chaudwan, district of Dera Ismail Khan, 204 cases and 48 deaths occurred.

In *Bombay Presidency* it is considered that relapsing fever is not only endemic but that it is very widespread. There were 300 attacks and 33 deaths in Godhra; a second outbreak occurred in Vijalpur village with 201 attacks and 10 deaths; Belgaum district had 71 cases and 7 deaths; Hubli criminal tribe settlements had 63 attacks and 3 deaths; and Gadag had 47 cases and no death.

In the *Punjab* the total recorded cases and deaths were 28,830 and 7,568 respectively, giving a case mortality of 26 per cent. It has long been endemic; but in the last few years it has exhibited a marked tendency to assume epidemic characters. Hissar had 200 cases and 57 deaths; Multan 158 cases and 103 deaths; Mianwali 427 cases and 99 deaths; Ferozepore 946 cases and 182 deaths; Dera Ghazi Khan 3,523 cases and 898 deaths; and Muzaffargarh 23,460 cases and 6,207 deaths. An emergency staff of 11 assistant surgeons, 10 sub-assistant surgeons together with vaccinators, etc. were employed.

In the *United Provinces* the number of deaths was 250.

In *Madras Presidency* the disease was very widespread, but the climatic conditions in this Presidency appear to be unfavourable to the persistence of the infective virus, and the fever does not usually continue in epidemic form for more than two years in

the same area. In Coimbatore District the number of cases treated was 24 ; there was an epidemic in Tanjore District with 400 deaths ; and an outbreak in Ootacamund. The disease was also prevalent in the rural areas of the Nilgiris District.

80. *Kala-azar*.—In *Bombay Presidency* one death was reported.

In the *United Provinces* the number of deaths was 86.

In *Bengal* 4,565 deaths were reported. Calcutta alone accounted for 501 deaths. 51,740 cases were treated in hospitals, dispensaries, etc.

In *Assam* the disease is widespread. The number of cases treated was 35,071 against 19,659 in 1922. The total number of deaths was 4,131 or about 1,839 more than that recorded in 1922. The percentage of deaths to the number of cases treated was 11.7 per cent. A Health Board which was formed has brought about closer co-operation in regard to this disease between the Public Health and Medical Departments. Sub-assistant surgeons and local board doctors survey villages within a five mile radius of their dispensaries. In all infected areas dispensaries were opened. Injections were given twice a week. Surveys were continued and careful records of them were kept. Special regulations enforcing compulsory attendance were framed. Six special kala-azar assistant surgeons were employed in the more heavily infected districts, and 79 special sub-assistant surgeons were employed in addition to the local board doctors and the ordinary medical department sub-assistant surgeons. In Cachar 737 villages were surveyed and 117 villages were reported to be infected.

81.—*Influenza*.—It was not severe.

North-West Frontier Province showed 216 cases and 47 deaths. It was prevalent in a mild form in Chitral for the last two months of the year.

Bengal reported 1,966 deaths against 2,408 in 1922 and 4,751 in 1921. The disease is said to be declining in prevalence.

In *Bombay* it was present throughout the year in all parts of the Presidency with localised mild exacerbations in certain areas. The number of deaths registered was 991.

In the *United Provinces* mild cases occurred in several districts, Cawnpore and Naini Tal having the largest numbers.

In the *Central Provinces* a mild form of the disease caused 6 attacks in Nagpur Jail and 80 in Jubbulpore Jail, but none proved fatal.

In *Assam* there were 554 deaths but no acute epidemic of the disease was reported from any district.

82. *Enteric Fever*.—Lack of recognition of this disease, except in the larger towns has in the past lulled many to a false sense of security. Even though statistical evidence of great prevalence is wanting, its general prevalence throughout the country is to be postulated in view of the habits of certain sections of the population. The Director of Public Health, Punjab thinks that few Indian children reach the age of 12 without having had an attack. One may doubt if it is so prevalent. The following table shows the deaths registered as due to it in those provinces reporting.

		Number of deaths.	Ratio.
Bengal Presidency	Rural	5,706	.1
	Urban	974	.3
Bombay Presidency	Rural	1,734	.11
	Urban	542	.14

		Number of deaths.	Ratio.
Assam	Urban	16	...
United Provinces	Rural	12,366	.29
	Urban	1,921	.64
Burma	Urban	252	.31
Howrah City		257	1.3
Calcutta City		460	.5
Bombay City		130	.11
Karachi		44	.22
Hyderabad (Sind)		22	.80
Poona		94	.71
Hathras		93	2.40
Lucknow		240	1.10
Muttra		181	3.71
Benares		427	2.18
Farrukhabad-cum Patehgarh		220	4.55
Agra		284	1.74
Simla		10	...
Rajpur		20	...
Coimbatore		65 treated	
Moulmein		17	.28
Bangoon		47	.14
Bassein		28	.66
Mandalay		106	.71

Rural returns are admittedly very defective and probably valueless.

In *Bombay* 2,276 deaths were registered as due to enteric. The accuracy of death returns from rural areas cannot be relied upon. *Bombay City* returned 130 deaths against 109 in 1922. *Karachi city* and *Hyderabad* showed 44 and 22 deaths, respectively.

In the *Punjab* 10 cases of enteric were registered in *Simla*. Of these six were imported, seven were confirmed by laboratory diagnosis, and 50 per cent. died.

In the *United Provinces* the number of deaths was 14,287 against 19,600 in 1922.

83. *Typhus Fever*.—In *North-West Frontier Province* this disease should be on the increase especially in certain of the submontane tracts of the province.

In the *Punjab* there was an outbreak in Bhajji State near Simla in 1922 and 28 cases, with 8 deaths, all among Indians, occurred in Simla. Major F. W. Cragg, I.M.S. of the Central Research Institute, Kasauli, was deputed to undertake a general investigation of the epidemiology of typhus fever in this province.

84. *Beri-beri*.—In *Burma* this disease was the subject of special investigation, but the care and thoroughness with which the reports were made were not uniform. It is proposed to repeat the investigation over another year. The Director of Public Health deals at length with it in his report from which we gather that, in the towns of *Burma* during the last four years, the average reported annual deaths have been 221, while during the past year 199 cases died of the disease. Of these 199, 116 were reported from Rangoon, 92 being Hindus. Mergui, Bassein, Mandalay, Maymyo, Tavoy and Akyab towns returned 22, 10, 10, 8, 7, and 6 deaths, respectively.

Owing to the fact that detailed reports for 111 cases admitted to the General Hospital, Rangoon, were not available, only 184 cases could be included in the above-mentioned investigation. The Rangoon Hospital cases showed 75 per cent. to be coolies by occupation and only 25 per cent. of the cases to be women. Of the 184 cases for each of which a detailed statement was received, 61 occurred among non-Burman races and most of these showed lengthy periods of residence in the country previous to contracting the disease. It is noteworthy that of 36 cases classed as Indians, 14 had resided in this province for less than one year, but as 11 of these were coolies, who usually come here for a short period, this point may be significant of the fact that diet rather than period of residence in the country had more to do with their falling sick. 123 cases occurred amongst the indigenous races of *Burma*, but no particular predisposing occupation was observed. Chins appear to be particularly susceptible. All the 184 cases were rice eaters; 163 used milled rice; many were accustomed to well varied diet with no apparent protein or vitamine deficiency and with no change in diet before the onset of disease. Samples of rice used by 47 of the patients were analysed and the phosphorus pentoxide content found to vary between .23 and .41 per cent, whereas .45 per cent has been regarded as the danger limit below which beri-beri cases are liable to occur. Of the rice samples analysed the one giving the highest P_2O_5 figure (.41 per cent) was associated with the only case in which oedema was absent. Following the report of the Director of Public Health further we find that, as regards seasonal incidence, the disease occurs after the rice has been in storage during the hot wet months of May, June and July. In Lower *Burma* last year there was a rise in the number of cases from July, the crest being reached in September. In Upper *Burma* a similar rise was noted from June to September with a rapid fall in October. In *Burma* therefore the disease appears to be definitely seasonal, July to November or December being the months of the greatest incidence.

Of the 184 cases, 38 were military sepoy, 20 were military police, 6 were civil police and 15 were prisoners in lock up, *i.e.*, 79 were in receipt of rations and were therefore restricted to a greater or less extent in their choice of food.

These observations are of the greatest interest and it is hoped that they will be continued.

85. *Respiratory diseases*.—*Bengal* reported 26,655 deaths against 26,371 during 1922. The Director of Public Health remarks that "the deaths so recorded represent only a small fraction of those that might properly be returned under this heading and that if any progress at all is being made in regard to concern for the public health there must be a steady and gradual increase in the record of such deaths."

Central Provinces and Berar recorded a total of 35,023 deaths, the ratio being 2.52 per 1,000 as against 2.62 in 1922. Jubbulpore had the highest mortality (10.29) perhaps due to people living in open fields on account of plague and to consequent exposure. Some other places returned a high mortality without any apparent cause.

Assam recorded 6,830 deaths, the ratio being .99 per 1,000 against 1.12 in 1922.

Burma recorded 10,854 deaths, the ratio being 1.00 per 1,000. The death rate has decreased. Pneumonia accounted for 2,771 deaths, the largest number occurring at Rangoon and Mandalay.

Total number of deaths recorded in *Bombay Presidency* was 84,324, the ratio being 4.40 per 1,000 against 4.31 in 1922. This rise of mortality is probably due to the prevalence of influenza. Bombay city contributed to the rise with a death rate of 13.27 as against 12.92. The urban areas recorded much higher rates than the rural—the housing congestion no doubt affording facilities for the spread of these diseases. The rates were urban 9.07, rural 3.27 as compared with 8.93 and 3.20 respectively in 1922. Ahmedabad (16.54) had the highest rate; Poona city 13.72; Hyderabad 10.22; Karachi 9.91; and Nasik 8.22.

North-West Frontier Province recorded 1,947 deaths with a ratio of 0.91.

Punjab showed 38,434 deaths, giving a ratio of 1.87 per 1,000 against 1.95 in 1922. The urban rate was 4.49 against 4.39 in 1922; rural rate 1.58 against 1.68 in 1922. Ambala had the highest death rate (10.69). In Lahore 825 deaths occurred.

The United Provinces recorded 26,108 deaths, a ratio of .57.

Madras Presidency recorded 55,951 deaths with ratio of 1.4 against 1.2 in 1922. The rural death rate was 1.4 per 1,000.

The death rates of some of the cities are as follows :—

	1923.	1922.
	Per mille.	Per mille.
Bombay City	13.27	12.92
Calcutta	9.3	9.5
Madras	9.0	9.5
Rangoon	8.83	9.33
Karachi	9.91	6.50
Delhi	11.66	11.1
Howrah	6.6	6.2
Poona	5.54	18.66
Surat	10.55	14.10
Ahmedabad	8.43	16.37
Agra	10.45	10.51
Cawnpore	12.73	6.81
Allahabad	8.32	8.16
Lucknow	11.64	12.57
Jubbulpore	12.96	10.67
Nagpur	8.84	8.13

86. *Pneumonia*.—United Provinces.

	1923.	1922.
Number of Deaths.	5,088 (ratio 11)	4,353 (ratio 1.39 urban)

Bombay Presidency. The total number of deaths was 17,425 or a death rate of 0.90. Guzerat showed 3,850 deaths against 3,374 in 1922; Bombay city showed 9,539 deaths against 9,060 in 1922; urban death rate was 3.64 against 3.53 in 1922; rural death rate was 0.24 against 0.18 in 1922; the highest urban rate was in Poona city (8.04).

In *Bengal* a small number of deaths was reported though the disease is known to be very prevalent. 11,567 deaths were registered during the year against 10,615 in 1922.

Burma (towns only).

	1923.	1922.
Deaths.	2,771 (ratio 2.28)	2,958 (ratio 2.44 urban)

The death rates of some of the cities were as follows :—

	1923.	1922.
	Per mille.	Per mille.
Calcutta	3.2	3.0
Howrah	2.2	2.2
Bombay City	8.30	7.85
Poona	8.04	11.28
Karachi	3.99	2.09
Hyderabad Sind	5.12	3.50
Surat	3.05	4.36
Lucknow	5.34	6.10
Nainital	6.39	6.39
Agra	4.75	4.76
Delhi	1.1	0.7

Its relation to malaria and other diseases is of the greatest importance and it demands more careful study.

87. *Pulmonary tuberculosis*.—As has previously been observed an exact estimate of the incidence of this disease is largely one of surmise as present figures are far from complete.

In the *Central Provinces and Berar* 1,192 persons suffering from tuberculosis of the lungs were treated in hospitals and dispensaries, but such variable figures mean little. The statistics of the *Pendra Sanatorium* are not available. The *Bilaspur Mission Hospital* treated 208 patients.

In *Burma*, tuberculosis of the lungs is stated to be on the increase in towns. *Maymyo* recorded 17 deaths from phthisis pulmonalis; in *Myitkyina Hospital* 44 cases were treated; in *Myingran* it was said to be very prevalent among the adults. *Rangoon* had 939 deaths from tuberculosis, of whom 887 were recorded as phthisis; *Mandalay* had 263 deaths, and *Bassein* had 129 deaths. Total number of registered deaths from phthisis was 1,609.

In *Bombay Presidency* there were 16,244 deaths from phthisis, or a death rate of $\cdot 84$ which is $\cdot 01$ above the 1922 rate. *Bombay city* had 1,203 deaths, equal to a death rate of $1\cdot 05$ as compared with $1\cdot 14$ in 1922. The urban death rate was $1\cdot 59$ against $1\cdot 60$ in the previous year, and the rural death rate was $0\cdot 66$ against $0\cdot 64$ in the previous year. In *Nasik* 54 of the phthisis deaths were amongst the residents of *Nasik* while 22 were non-resident. In *Sind Registration District* the Assistant Director of Public Health says that the majority of deaths from phthisis occurred among females, and he blames the *purdah* system for this. The anti-tuberculosis dispensary in *Karachi* treated 1,468 patients.

In *North-West Frontier Province* 482 deaths were recorded from phthisis. The *purdah* system is said to be one of the most important factors in the incidence and spread of tuberculosis. The percentage of total deaths from phthisis in *Haripur* was no less than 14·6, in other words one person out of seven in this town died of tubercle of the lungs.

In *Bengal*, deaths from this cause continue to be reported very inaccurately. During the year 4,942 deaths were registered against 4,477 in 1922.

In the *United Provinces* phthisis accounted for 4,822 deaths, a ratio of $\cdot 11$.

In the *Punjab*, *Lahore* recorded 519 deaths from phthisis.

The following are the death rates returned by some of the cities and towns :—

Bombay city	1·05
Calcutta	2·2
Farrukhabad	3·97
Lucknow	4·52
Allahabad	2·54
Naini Tal	3·12
Agra	2·80
Benares	2·01
Cawnpore	3·25
Karachi	1·81
Hyderabad (Sind)	2·88
Ahmedabad	3·56
Surat	3·27
Poona	3·76
Rangoon	2·50

Existing provision for treatment was outlined in some detail in the report for 1921.

88. *Cholera*.—73,002 deaths were registered as against 121,679 for 1922, the death rate being .30 as against .50 in 1922.

In *Bengal* the deaths fell from 51,712 to 41,483.

In *Bombay* the number of deaths recorded for cholera was 9,221 against 2,768 in 1922 and a decennial mean of 12,886. Its history in 1923 showed a late appearance (only about one-third of the deaths up to the end of June), and thereafter, the movements of the people during pilgrimages provided an easy means of spread. The heaviest incidence was in the Central Registration District which had 6,963 deaths or three-fourths of the total. In the Presidency proper 18 out of 20 districts were infected.

Infection in Poona district persisted till December, with 218 affected villages and a total of 2,098 deaths. In the Western Registration District, Nasik with 771 deaths suffered most. Malegaon city in the few days during which its epidemic lasted showed an incidence of 11.47 deaths per mille of the population. A feature of the epidemic in this city was the comparative immunity enjoyed by the Hindus who depended for their drinking water supply mainly on wells which were regularly permanganated by the municipal health staff. The high incidence among the Mohammedans (481 attacks and 217 deaths) was attributed to their obtaining their drinking water supply from the river "Mosam," to the filthy habits of the Momins and defective conservancy of this quarter, and to the incidence of the Moharram. In some of the areas where cholera took the heaviest toll the conservancy was defective and water supply liable to pollution.

In Nasik city, which is in intimate contact with Pandharpur through pilgrims, there were only 6 cases with 5 deaths, and 4 of these cases were imported. The immunity of this city is ascribed to its piped water supply, regular sterilization of both the drinking water and that of the sacred bathing tanks in the Godavari, and a system of early notification by which all cases of epidemic disease were promptly reported and timely measures taken to prevent the spread of infection. The preventive measures urged were that each local board should create its own district health staff and arrange for more prompt notification of first cases, and that, in the meantime, a small staff of special sanitary inspectors (two under each Assistant Director) should be reappointed to deal with village water supplies and instruct the people in prevention generally.

In *Bihar and Orissa* 8,198 deaths occurred from cholera as against 26,805 deaths in 1922. A special cadre of ten assistant surgeons was maintained, and a special epidemic reserve of 100 vaccinators was entertained. These men received a few days training in the use of disinfectants and in disinfection of wells. 3,415 doses of cholera vaccines were issued to Civil Surgeons.

In the *Punjab* there were only 11 deaths and 25 cases, 18 of which occurred in cities or large towns and 7 in rural areas. The source of infection is reported as being somewhat obscure. Cholera may be an endemic disease in the province, and drinking water may not be the sole or perhaps even the main source of infection. Other opinions exist, and certainly much importation of infection into this province from the adjoining United Provinces has taken place in the past.

In the *United Provinces* there were 2,591 deaths giving a ratio of .06 per mille of the population. Deaths for 1922 were 2,330. The 20 plains districts which were heavily affected were supplied with about four tons of potassium permanganate. Generally speaking in this province the disease was largely one of rural areas since the larger municipal water supplies have been perfected.

Central Provinces and Berar had 1,090 deaths due to cholera. 347 were inoculated against the disease and no deaths were said to have occurred among these.

Madras showed 5,169 deaths due to cholera as against 16,502 in 1922. Cuddapah, Coimbatore and North Arcot returned the largest number of deaths from this disease. The death rate was .1 per mille against .4 in 1922 and the quinquennial average rate

1·4 per mille. Investigation into the epidemiology of cholera in the worst affected district of Cuddapah revealed that the water courses noted for their under currents were often the carriers of infection to the villages lying along their courses. In Coimbatore district the river became infected. The villages higher up the river had no cholera while in those down river cholera quickly developed. The spread of the epidemic in the villages was accentuated by the presence of step wells which form the drinking water supply of the people. Infection of the villages in the interior was often carried by weekly shandies. In North Arcot the internal sources of infection were the Vaniyambadi Municipality, where cholera is practically endemic, and Gudiyattam and Vellore Municipalities. The measures adopted for preventing the spread of cholera were: prevention of contamination of drinking water supplies, Hankinisation and chlorination of wells, disinfection of houses, and distribution and administration of medicines and propaganda. The incidence of cholera was very high in the months of January, November and December; but correct registration of the causes of death is said to be a very difficult matter.

In *Burma* the number of deaths was 1,488 as against 5,047 in 1922.

89. *Dysentery and Diarrhoea*.—186,458 deaths were registered against 177,852 in 1922, the death rates being ·77 and ·74, respectively. As in previous years some districts attempted to separate the two diseases. This is always a difficult matter in the absence of laboratory diagnosis, as many diarrhoeas are really mild dysenteries.

It will be of advantage however to record such figures as are forthcoming, showing the totals of both diseases and the ratios for 1922 and 1923.

Deaths.

Province.	Total Dysentery and Diarrhoea 1923.	RATIO PER MILLE.		Total Diarrhoea.	Ratio.	Total Dysentery.	Ratio.
		1923.	1922.				
Punjab	11,612	·57	·34	..	not available	..	..
Central Provinces and Berar	24,321	1·75	1·84	19,064	1·37	5,257	·38
United Provinces	10,878	·24	·23	5,778	·13	5,100	·11
Bombay	22,238	1·18	1·10	17,024	·89	5,214	·27
Coorg	104	0·63	1·15	38	·32	66	·40
Burma	6,685	·62	·83	1,344 (towns)	1·10	1,254 (towns)	1·03
Bengal	21,519	·5	·5	8,094	·2	13,425	·3
Bihar and Orissa	* 18,788	·5	·5	..	not available	..	..
Assam	9,109	1·33	1·49	123 (towns)	..	397 (towns)	..
North-West Frontier Province	196	·09	·10	..	not available	..	..
Madras	† 60,323	1·5	1·3	..	not available	..	..
Delhi	424	·84	·73	360	·71	64	·12

* Disease most prevalent in Orissa Division (14,249 deaths) due to bad water supply largely.

† Mortality greatest in December.

90. *Plague*.—This disease is probably reported very accurately. 229,140 deaths were reported against 77,615 for 1922. The death rate was .95 against .32 for 1922. The increase in mortality was found in Delhi, Bihar and Orissa, United Provinces, Punjab, North-West Frontier Province, Central Provinces and Berar, Madras Presidency and Bombay Presidency.

In *Bihar and Orissa* the death rate was .8 as compared with .4 in the previous year. Facilities for inoculation were provided in all plague infected districts.

In the *United Provinces* 74,187 deaths occurred as against 23,291 for 1922 with a ratio of 1.63 as against 51 per mille for 1922. Forty-two towns were affected and amongst these the following plague death rates were recorded:—

Ghazabad (34.11), Mau and Mubarakpur in Azamgarh district (29.22) and (25.22) respectively. The death rate in urban areas was 1.22 and in rural tracts 1.66 against .45 and .52 respectively in 1922.

The *Punjab* showed 52,327 deaths as against 7,837. The death rate was 2.44 per mille in British districts, while Urban and rural death rates were 2.05 and 2.48 per mille respectively. A curious feature of the Punjab epidemic was its slow decline. The bubonic type prevailed. The striking features of the epidemic were its occurrence in moderate intensity and restricted distribution in the spring, the slow and incomplete decline of plague during the hot weather, and the early and marked recrudescence of the disease towards the end of the year. The number of inoculations performed was 100,554 or 192 for every 100 plague deaths.

The *Central Provinces and Berar* showed 15,867 deaths against 6,149 in 1922. The Civil Surgeon, Yeotmal, writes that 6,000 inoculated persons remained more or less in the infected locality and had 28 attacks and 9 deaths. The total number of inoculations during the year was 46,453.

In *Madras Presidency* 12,110 deaths occurred against 9,193 in 1922 with a death rate of .3 per mille and a quinquennial average of .3 per mille. Sixteen districts registered deaths from plague; but 96 per cent. of the total mortality occurred in the following four districts: Madura (4,858 deaths), Coimbatore (3,888 deaths), Salem (1,818 deaths), Bellary (1,090 deaths).

In Madura two special sub-assistant surgeons were employed on inoculation duty. Grain was exposed to the sun; and evacuation of infected areas and rat destruction were freely carried on whenever possible.

In Coimbatore plague took deep root and the following measures were urged: (a) a vigorous rat campaign, (b) control of offensive trades, (c) improvement of village sanitation particularly in connection with making grain stores rat-proof, (d) an adequate knowledge on the part of the people of the role of the rat and plague. 10,415 inoculations were performed in this district.

In Salem the health staff were advised to trace out villages where, in the hot season, a steady but not excessive rat-fall occurs, and, in the commencement of the cold season, the rat-falls suddenly (increase as those are the villages in which, within a short time afterwards, human plague appears.

The total number of inoculations in different districts was 200,426. Total number of deaths in municipal towns was 2,009; while the rural towns (43 in number) registered 1,220 deaths. Propaganda work was done. The district health officers were appointed as special plague officers for the districts for the year. Bellary and Tinnevely both took active measures against the disease.

In *Bombay Presidency* the total number of deaths was 33,741 as against 8,379 for 1922 and the death rate per mille was 1.76 or quadruple the figure for last year (.42).

Dharwar and Belgaum were the chief plague centres as they have been year after year. These two districts with Satara contributed two-thirds of the plague mortality.

with death rates of 7.70, 6.17 and 7.30, respectively. For the rest, East Khandesh with a death rate of 3.51 and a total plague mortality of 3,776, Sholapur with 2,944 deaths, and Poona with 2,185 deaths suffered most severely. Bombay city returned 1,327 deaths or more than twice the number of the previous year; Karachi city 457 deaths; and Belgaum district 5,854 deaths as against 1,430 in 1922. The epidemic was exceptionally severe in Dharwar where 7,983 deaths occurred as against 2,138 in 1922 and where 2,448 inoculations were performed.

In Satara town circle approximately 31 per 1,000 of the population died of plague. The highest mortality was in the month of September. In 12 villages 766 inoculations were performed.

In Western Registration Districts 4,571 deaths occurred against 1,318 in 1922. Nasik suffered less than last year. In Bombay suburban district the epidemic prevailed from January to October.

In Sind Registration District Karachi contributed 93 per cent. of the total deaths from plague. The highest number of deaths was reported in May and the lowest in January.

Five temporary S. M. S. officers were engaged in the Presidency for three months for inoculation work. They visited 56 villages and inoculated 4,699 persons. Inoculations were also performed by Civil Surgeons, officers in charge hospitals and dispensaries, medical officers in charge prison hospitals, private medical practitioners and others. The total number inoculated during the year was 145,395 as compared with 73,098 in the previous year, 127,728 of these being done in British territory and 17,667 in Indian States. During the year, amongst inoculated persons, 233 cases of plague were reported, of which 60 proved fatal. Sixty of these were attacked during the incubation period and 173 after incubation period; 20 died during incubation period and 40 after incubation period. The number of inoculations by districts was as follows: Dharwar 49,803, Satara 16,470, Sholapur 12,258, Poona 11,529, East Khandesh 6,532, Belgaum 5,436, and by towns as follows: Bombay city 10,579, Karachi 4,412, Hubli 11,646, Poona 8,211, Sholapur 7,356, Wai 5,883, Satara 4,822, Amalner 4,066, Dharwar 2,953 and Mahableshwar 2,138, and in Jails 7,245.

The essentials laid down by the Director of Public Health in a trapping campaign were a good trap, preferably the 'Wonder' type, used in the proportion of five traps per cent. of population, a fixed scheme of operations to allow of every house being trapped once a week, trapping throughout the year but with increased energy in the off season of plague, and the use of fresh bait. At none of the places did the number of rats destroyed reach the required figure, i.e. two rats per head of population, which is the number regarded as the necessary minimum for protecting a community from an epidemic following an epizootic. There is little doubt that an intensive rat campaign, if systematically and energetically conducted, has a very definite effect in controlling and limiting plague in a large city, though it may be a costly measure as an item of recurring expenditure.

91. **Delhi Plague.**—As a specially intensive campaign was carried through in Delhi city, an extract from a note prepared and circulated on the scheme is appended. The following extract on the plague campaign in Delhi in the winter of 1923-24 is of interest even though the figures quoted in the tables deal with part of 1924:—

1. *Origin.*—Delhi city from its geographical position and railway connections is open to plague infection from all sides. The surrounding districts of the United Provinces and Punjab had been for some time notoriously plague stricken and it was therefore no matter for surprise that in the winter and spring of 1922-23 a considerable outbreak occurred and caused 1,510 deaths in the city and 1,185 in the district. The proximity of the Imperial City with its 30,000 inhabitants and of the winter headquarters of the Government of India made it imperative that the progress of the disease

(ii) Of these 82 cases, 48 were imported and 34 were local. The imported cases were all traced to the surrounding districts, while some of the local cases undoubtedly owed their origin to imported infection.

(iii) Table II shows plague incidence in the city, in the Notified Area and in the Rural Circle from October 1st, 1923 to May 31st, 1924.

TABLE II.

Area.	Cases.	Deaths.
City of Delhi	82	61
Notified Area of Delhi (Imperial Delhi and civil lines)	1	..
Rural Circle of Delhi	2,861	2,377

It is thus evident that Delhi city and Notified Area had ample infection at their own door but that both escaped lightly.

(iv) Table III gives a comparison between plague figures of Delhi city and Lahore city between October 1st, 1923 and May 31st, 1924.

TABLE III.

City.	Cases.	Deaths.
Delhi	82	61
Lahore	2,918	1,669*

* Up to week ending 17th May 1924.

In Lahore rat destruction as a general measure had practically ceased till the epidemic occurred.

(v) Table IV shows the incidence in Delhi city and Delhi province as compared with that in the surrounding districts of the United Provinces and Punjab, between October 1st, 1923 and May 17th, 24th, 31st, 1924.

TABLE IV.

District or Area.	Rohtak District.	Meerut District.	Bulandshahr District.	Gurgaon District.	Delhi Province (excluding Delhi city).	Delhi city.	Delhi Notified Area.
Cases	25,919	7,899	7,478	2,202	2,861	82	1
Deaths	(a) 21,785	(b) 6,287	(b) 6,268	(a) 2,029	(c) 2,377	(c) 61	..

(a) To 17th May 1924.

(b) To 24th May 1924.

(c) To 31st May 1924.

This table requires little comment. Meerut and Bulandshahr are on the other side of the Jumna from Gurgaon and Delhi province while Rohtak surrounds Delhi on the west. Considering the traffic by road and rail from these highly infected areas it must be conceded that chances of importation of infection in face of no restrictions were high.

(v) Table V shows the number of traps and units in use from November 1st, 1923 to 31st May, 1924.

TABLE V.

Date.	1st week November.	Last week November.	Last week December.	Last week January.	Last week February.	Last week March.	Last week April.	Last week May.
No. of traps .	705	2,579	4,576	5,841	6,143	6,146	6,146	5,681
No. of units .	4	16	28	28	36	36	38	38

This amounts to one trap for every 40 inhabitants and one unit to every 6,500 inhabitants.

(vi) Table VI shows the total rats caught between October 1st, 1923 and May 31st, 1924, as compared with the same period of the previous year.

TABLE VI.

Period.	October 1st, 1922 to June 3rd, 1923	October 1st, 1923 to May 31st, 1924.
Rats caught	119,394	242,161

The numbers, which are nearly $\frac{1}{4}$ of a million in eight months, are more than double those of the previous year, the highest number caught in one week being 13,263. Rs. 84,000 per annum was the cost of the campaign.

(vii) Table VII shows the number of rats examined in the laboratory and the number found infected between November 1st, 1923 and May 31st, 1924.

TABLE VII.

Total rats examined.	Total found infected.
13,359	12

5. *Summary and conclusions* : (a) During the winter and spring of 1923-24 Delhi province and surrounding districts were badly plague infected while some *e.g.* Rohtak, Meerut, Bulandshahr were severely infected, (b) commercial intercourse with these districts was not restricted though a trapping unit was kept at two of the points of entry. (c) Delhi city with 34 local cases practically escaped ; importations being traced to the surrounding districts, (d) nearly $\frac{1}{4}$ of a million rats were killed in 8 months and of 13,359 rats specially selected for laboratory examination only 12 were found infected.

An intensive anti-rat campaign on a scale unknown before in Delhi again bore out what was demonstrated in Satara and other places, *i.e.*, that, if systematically and strenuously conducted, it will have a very definite effect in controlling and limiting plague in a large city and that too at an expense which, though considerable, is commensurate with the benefit derived. In the light of our present knowledge the more intensive such a campaign is the more likely is it to succeed; but so long as plague is endemic in the surrounding districts the expenditure will be likely to remain a recurring one, if protection is desired.

The proposition when reduced to a commercial basis is that if a community such as Delhi is willing to pay for protection this can in great measure be obtained by an intensive anti-rat campaign. It will be necessary, so long as plague is epidemic in the area, to regard the cost of this as a recurring charge. It is axiomatic if the optimum results are to be expected that such a campaign should go hand in hand with the erection of rat-proof grain godowns and the cessation of bulk storage of grain in dwellings.

92. Rat plague, rat extermination and rat fleas:—Both local Governments and Municipalities have been alive to the necessity for instituting measures against rats where plague was endemic or severe.

In the *Punjab* during the 'off season' the extirpation of rats by trapping and by poisoning (barium carbonate), together with the 'smoking' of rat holes with Lane's Neem butties was carried out with a variable degree of thoroughness. In Gurgaon, Rohtak, Rawalpindi and certain other districts intensive rat destruction campaigns were carried out in recently infected areas during the 'off season,' but in many districts, partly on account of financial stringency and partly because plague fatalities during recent years have been few, no sustained effort was made to reduce rat infestation. In Lahore city, for example, the municipal committee abandoned rat destruction some four years ago, and, although plague was prevalent in the city in the spring of 1923 and rat mortality continued to occur throughout the hot weather, no attempt was made to organise an anti-rat campaign until after plague again became epidemic in the autumn. This was unfortunate. In Sialkot town 51,095 rats and in Multan 58,575 rats were destroyed; in Lahore city 36,000; in Amritsar city 17,850, and in Rawalpindi 27,272.

In the *North-West Frontier Province* Peshawar city had 8,662 rats caught and examined, 55 or 0.64 per cent. being found infected.

In *Delhi Province*, Delhi city had 150,180 rats destroyed, 50 per day being examined for infection which was found to be very low. The note at paragraph 91 describes this fully.

In *Bombay Presidency*, in the city of Bombay, 725,574 rats were killed, and of these 305,283 were examined, 0.52 per cent. being found infected. The following table gives the details:—

City of Bombay.	Rats examined.	Found infected.	Ratio per cent.	Human deaths.
January 1923	81,739	519	1.63	26
February 1923	27,223	967	3.55	95
March 1923	30,406	2,054	6.75	389
April 1923	31,032	2,304	7.42	424

City of Bombay.	Rats examined.	Found infected.	Ratio per cent.	Human deaths.
May 1923	25,741	1,327	5.15	294
June 1923	30,337	429	2.10	33
July 1923	18,679	239	1.27	13
August 1923	19,126	155	0.81	16
September 1923	20,060	140	0.69	22
October 1923	24,383	101	0.41	12
November 1923	24,477	73	0.29	2
December 1923	32,081	168	0.52	4
TOTAL	305,283	8,476	2.77	1,329

In Karachi Municipality 64,478 rats and in Hyderabad (Sind) 36,829 rats were trapped and destroyed.

In the *Central Provinces* where plague was very active many towns had anti-rat campaigns; but the number caught would appear to indicate that some of the campaigns were not sufficiently intensive in character. The numbers reported from various towns were as follows:—Nagpur city 90,422; Bhandara town 8,908; Hoshangabad town 9,622; Khandwa town 9,188; Burhanpore town 16,929; Amraoti (city and camp) 34,491; Khamgaon 28,547; Malkapur 21,153; and Jubbulpore 7,318.

In *Burma* over $\frac{1}{2}$ a million rats were destroyed (548,469). The following table shows the numbers:—

Town.	Rats destroyed.	Rats examined.	Per cent. infected.
Rangoon	496,987	17,216	66%
Bassein	8,766	8,766	85%
Moulmein	3,291	536	93%
Akyab . . . . .	...	1,183	0%
Myaungmya	9,460	...	...
Pyapon	7,003	...	...
Toungoo	5,601	...	...
Syriam	5,550	...	...
Kyaiklat	3,820	...	...
Kyaikto	2,465	...	...
Myingyan	1,168	...	...

Rat Fleas.—During 1923 a number of rat fleas from Rangoon and Mergui were identified with the following results :—

Rangoon	1,521 fleas	51.77 per cent.	Xenopsylla	Astia.
		45.23	"	Cheopis.
Mergui	258 "	96.12	"	Astia.
		2.71	"	Cheopis.
		1.16	"	Ct. felis.

Mergui is a port which has never been infected with plague and the rat flea distribution there lends support to the theory first put forward by Hirst of Colomba that the presence of *Xenopsylla astia* and the absence of *cheopis* may account for the immunity to plague enjoyed by large tracts in India and Burma. This aspect of the question is still receiving attention in various provinces, and further facts are being elicited.

In *Mysore* the station of Bangalore showed 30,503 rats trapped and destroyed.

Facts elicited would lead us to believe that a municipality if at risk through being in or near an endemic centre can, by an intensive anti-rat campaign, insure itself against this risk if it is prepared to pay the requisite price, and our experience in Delhi City would seem to support this conclusion.

93. Smallpox.—Attention is again drawn to the very full note on the history of vaccination in India which was incorporated in last year's report. The total deaths in 1923 were 44,084 as against 40,836 in 1922, more than half the deaths occurring in the Madras Presidency (*vide* table on page 106). Then in order came Bengal with 4,236 deaths against 7,864 in 1922; Assam with 3,213 deaths against 2,610 in 1922; Bihar and Orissa with 3,161 deaths against 2,560 in 1922. Burma with 2,846 deaths; Bombay with 2,811 deaths; Punjab with 2,140 against 1,608 in 1922 and the United Provinces with 747 deaths against 242 in 1922.

In *Madras Presidency* there was again an increase, the total deaths being 24,434 against 22,801 for 1922. The ratio was 0.6 against 0.5 for 1922. The highest death rates occurred in South Arcot (1.4) and in Malabar (1.2).

70 per cent. of the total mortality occurred among children under 10 years of age. The following statement gives the number of registered deaths, so far as ascertained, from smallpox in children and adults for the Presidency.

Age.	Number of deaths from smallpox.
Under 1 year	8,485 (34.7 per cent.)
1 to 10 years	8,449 (34.6 ")
Above 10 years	7,500 (30.7 ")

Successful vaccination figures remain much the same during 1922-23, these being 81,421 or 32.5 per mille of the population, against 81,161 cases and 32.4 per mille in 1921-22. Successful revaccination figures show 37,232 against 28,360 in the previous year. Revaccination among adults is a necessity, and a vigorous policy in conducting both primary vaccination and revaccination is clearly indicated.

In the district of Malabar infantile vaccination is not defective, but revaccination among adults is a crying necessity as will be evident from the following figures.

Children under 1 year	Deaths from smallpox.
From 1 to 10 years	857
Above 10 years	927
	2,272

Gudivada Taluk was the worst affected. For lack of employing an additional vaccinator at the psychological moment 103 out of 175 villages were left unvisited by the vaccinator in 1922-23 and a many of them were not visited for several years in succession. This led to the spread of the disease beyond easy control when the infection was once introduced. The Taluk Board has since appointed an additional vaccinator.

In *Assam*, in Nowgong—the worst infected district—two special vaccinators were appointed who with a permanent vaccinator operated throughout the year.

In *Bihar and Orissa* report the Director of Public Health reminds his readers that the manufacture of vaccine lymph and the organisation and staff for vaccination work are all at present arranged for by Government and every facility is given for the operation with pure vaccine.

In the *United Provinces* vaccination is highly organised, and the degree of protection, especially in the hill tracts, is very high.

In the *Punjab*, of the deaths registered from smallpox, 617 were in infants under one year of age, and 1,083 in children between one and ten years.

In *Bombay Presidency*, of the total deaths 726 were infants under one year and 1,428 were between one and ten years of age, 762 cases were investigated; of these 421 were among the vaccinated and 341 among the unvaccinated. Of the former 35 died, giving a case mortality of 8.3 per cent.; of the latter 89 died, giving a case mortality of 26.1 per cent.

94. Ankylostomiasis.—In Bihar and Orissa investigations in the Patna Lunatic Asylum, in the Central Jails at Bhagalpur and Buxar, in other jails, and amongst the mining population at Jharia have shown the general prevalence of the infection in from 50 per cent. to over 75 per cent. of the persons examined.

In *Burma* 33,025 prisoners in 30 jails were examined, of whom 10,987 or 33.18 per cent. were found to be infected. Special investigations were made to estimate "worm index" according to Darling's method. Out of 682 cases treated 67.16 per cent. were positive. Cultivators and coolies were chiefly affected. The total number of worms counted was 7,629 or 11.18 per head, and of these 7,012 or 91.9 per cent. were of the *Nectar americanus* variety, 430 or 5.8 per cent. of the *Ankylostoma duodenale* variety, while 187 or 2.4 per cent. were *Ankylostoma ceylonicum*.

In *Madras Presidency* there is a high infection rate from hookworm. Local anti-hookworm campaigns were carried out, and the adoption of a large anti-hookworm campaign is under consideration. The work done consisted of propaganda work, 2,866 lectures, the examination of 20,790 persons, of whom 16,563 were found positive (a percentage of 79.7 infected) and the administration of 93,469 treatments. Surveys were conducted by the district health officers of Salem, Kurnool, and Madura. The use of proper latrines and the dangers of soil pollution were also explained. The organisation of local bodies consisting of medical officers and private practitioners was advocated.

In the *Central Provinces and Berar* in the Nagpur Jail 2,361 convicts were examined, of whom 837 or 35.45 per cent. were found infected. Carbon tetrachloride was tried in 127 cases with satisfactory results.

95. Rabies.—Experiments in the preservation of the potency of anti-rabic vaccine after transit in the heat of the plains are being carried out; and, though not yet completed, they have established the possibility of transit without diminution of potency during the cold weather in certain areas, and with certain precautions. As a result several provinces have established or are proposing to establish local inoculation centres under approved local conditions. Such centres should in time increase in number and so tap a larger field of untreated cases with diminished expenditure. Madras, Bombay

and the Central Provinces are moving rapidly in this matter ; but the excessive heat of the Indo-gangetic plains in summer has prevented this development in the Upper Provinces and the Punjab until more is known regarding the conditions regulating deterioration by heat. This is now the subject of study.

In the *Central Provinces* there were 164 deaths of which 82 were registered in municipal and other towns. There were 338 dog bite cases in municipal towns of which 275 were sent for anti-rabic treatment with 261 recoveries and 2 deaths, the results of the remainder not being known. The towns in Nimar district sent 50—the largest number. 9,985 stray dogs were destroyed. During the year arrangements for local inoculation have been made in Nagpur and Jubbulpore.

In *Bombay Presidency* deaths from rabies show an increase to 236 against 160 in 1922. Poona district recorded 31 of which there were 11 in the city. Ahmedabad, Satara and Kaira districts showed 33, 25 and 24 deaths, respectively.

The total number of *Punjab* patients treated at Kasauli was 2,250 against 1,989 in 1922 ; of these 240 were Europeans and 2,010 Indians. There were 13 deaths and 5 failures among Indians and 1 death and 1 failure among Europeans.

Madras Presidency recorded 282 deaths for the year against 220 in 1922.

96. Mortality from wild animals.—The mortality figures for 1923 from wild animals and venomous snakes show that in British India 3,605 persons were killed as against 3,263 in 1922.

Tigers were responsible for 1,693 deaths, leopards for 464, wolves for 835, bears for 79, elephants for 70, and hyenas for 18. Deaths were highest from tigers and leopards in Madras, from wolves in the United Provinces, from bears in Bihar and Orissa, and from elephants in Assam.

Of the 446 deaths from other animals 101 are assigned to wild boars and pigs, and 213 to crocodiles and alligators. The highest number of deaths from all wild animals occurred in the United Provinces (909), Madras, the Central Provinces and Berar, and Behar and Orissa coming next in order. There was an abnormal increase of 418 deaths, chiefly from wolves, in the United Provinces over the previous year's figure, and this more than accounts for the increase in the total number of deaths.

The mortality from snake bite among human beings fell from 20,090 to 19,990. Decreases occurred in Bengal, Bihar and Orissa, Bombay, the Central Provinces and Berar and the Punjab; but the United Provinces, Madras, and Burma have reported increases.

During the year 23,911 wild animals were destroyed, of which 1,686 were tigers, 5,247 leopards, 2,548 bears, and 1,687 wolves. A sum of Rs. 1,65,367 was paid in rewards against Rs. 1,85,785 in the previous year. The number of snakes destroyed increased from 58,370 to 95,545.

97. Fairs and Festivals.

Bengal.—The Ganga Sagar mela passed off smoothly. As in previous years a temporary pipe water supply was provided. The tanks were systematically chlorinated. Absence of cholera during the mela is attributed to elaborate sanitary precautions.

Punjab.—There was an absence of any outbreak of infectious disease during the important fairs and religious gatherings. The Pehowa fair was attended by the Assistant Director of Public Health and its sanitary arrangements were well organised. The annual Baba Farid fair was held at Pakpattan in Montgomery and over 74,000 persons attended.

Assam.—The only pilgrim fair of any importance is the Sidheswari mela in the district of Cachar, at which about 8,600 persons assembled. No outbreak of any epidemic disease was reported.

United Provinces.—The careful attention which has been given to these very important fairs by the staff of the Director of Public Health and by other administrative bodies concerned during the past quarter of a century is bearing fruit and the public is reaping the benefits. In all the important fairs and religious gatherings infectious disease was conspicuously absent even in sporadic form. Magic lantern demonstrations were given at a number of fairs by the Assistant Hygiene Publicity officer and his staff.

Bombay Presidency.—(a) At Asha'li Fair at Pandharpur the notable features were: the large number of pilgrims, a partial failure of water supply arrangements, and an outbreak of cholera among the pilgrims. 160,000 pilgrims paid the tax. Cholera had become prevalent in the neighbourhood and an outbreak in Pandharpur was anticipated. Infection was carried to a number of places but in no case did a widespread epidemic ensue. 138 cases of cholera with 93 deaths occurred in Pandharpur during the first 12 days of the fair.

(b) The Kartiki fair passed off satisfactorily without epidemic disease.

(c) At Shingnapur Fair (attendance about 15,000) 11 cases of cholera occurred, mostly amongst people from His Exalted Highness the Nizam's dominions.

Bihar and Orissa.—During and just after the Rath Jatra Festival there was a small epidemic of cholera. The case of Puri is cited for special consideration and special measures. The climatic conditions, the density of population and overcrowding during melas, the debilitated state of many of the pilgrims, the feeding arrangements, and the inadequacy of conservancy arrangements to deal with such an enormous increase of population together with defective water supply, all contributed to the production of epidemic cholera.

98. Public health administration and staff training.

Madras Presidency.—There are three Assistant Directors of Public Health, 23 district health officers in charge of the rural areas of the districts (excluding the Nilgiris and the Agencies), and 229 health inspectors. Each district health officer has a staff of 8 to 15 health inspectors.

Burma.—A training school for public health inspectors was opened. The course of training lasted ten months. Proposals for the employment of ten Burman sub-assistant surgeons for a definite term on whole time public health duty in Burma have been submitted to the Government. The proposals for the establishment of a provincial Hygiene Institute have now taken a definite shape. It is hoped to commence building soon.

Punjab.—Twenty vaccinators received training in the principles of elementary hygiene at Lahore. Five classes each lasting a fortnight were held during the months of January, February and March. The number of municipal medical officers of health remained the same as last year. Proposals for the appointment of two more district health officers were considered and approved and necessary provision on account of their pay and establishment has been made in 1924-25 budget. Twelve out of 22 candidates passed out of the Sanitary Inspectors' class.

United Provinces.—The present L. P. H. class was started in July 1923. Eight students were admitted but two dropped out.

Sanitary Inspectors' classes. Out of 21 students 13 passed the apprentice Sanitary Inspectors' examination; fourteen out of 16 passed the Sanitary Inspectors' examination; three out of five passed the Chief Sanitary Inspectors' examination.

There are seven first class, 14 second class and nine third class municipalities; but 10 municipal boards have not yet appointed medical officers of health.

Bihar and Orissa.—During the year only seven health officers were employed.

99. School Medical Inspection.—In *Bihar and Orissa* five school medical officers visited 237 schools, examined 11,618 pupils and delivered 1,468 lectures on points of general importance such as the insufficiency of diet of students, the prevalence of defective vision and the need for its correction.

In the *Central Provinces and Berar* the number of children examined was 43,196 boys and 5,260 girls; of these 380 were found unvaccinated, 850 with enlarged spleens, and 617 with contagious diseases.

In rural areas the epidemic dispensary staff inspected 967 schools and examined 49,759 children, of these 1,279 were found unvaccinated, 2,353 with enlarged spleens, and 1,526 with contagious and other diseases.

In *Madras* inspection was done during school hours. 5,670 boys from 38 Corporation schools were examined, girls being excluded as no lady doctors were deputed for the work. The most striking feature of the examination was the prevalence of infectious or contagious diseases including skin diseases, and of tuberculosis, *viz.*, 2.01 per cent. and 0.32 per cent., respectively. Of the boys examined 65.09 per cent. were found to be either unclean or to harbour head lice; 13.1 per cent. were classified under malnutrition; 27.4 per cent. were found to have bad teeth and mouths; 24.11 per cent. were suffering from nose and throat complaints; 5.9 per cent. from myopia and eye diseases; and 10.03 per cent. from ear diseases and defective hearing. School medical inspection, though in its infancy, has taken root.

100. Major Ports.—The work done at these ports has been set forth in greater detail than usual.

(a) *Port of Calcutta.*—2,006 vessels (932 inward and 1,074 outward) were inspected during the year.

189,684 crew, and 218,055 passengers were passed and 176 crew and 238 passengers were rejected. The town and port were officially declared to be infected with plague from 26th April to 31st July 1923. The port was not open to Haj pilgrims during the year.

25 sea going vessels, 16 inland steamers, flats, and launches, and 36 lighters, wharves, and dinghies were disinfected; 65 sea going vessels were fumigated with the Clayton apparatus.

The bathing and burning ghats of the port and also the foreshores of the river were kept in fairly good order.

(b) *Port of Bombay.*—794 vessels of all classes with 178,764 crew and passengers were examined during the year. The clothing and bedding and other articles of 83,239 members of crew and passengers were disinfected. 42 infected vessels were disinfected. 17 out of 19 vessels carrying pilgrims to Jeddah were fumigated by the Clayton process by the port health staff, the remaining two pilgrim ships being fumigated by means of their own Clayton apparatus; 29 vessels were fumigated by the British India Steam Navigation Company's apparatus. 222 smallpox contacts were vaccinated. 13,194 out-going pilgrims were vaccinated, and 5,965 were inoculated by anti-cholera vaccine by special vaccinating and inoculating staffs lent by the municipality.

645 outward bound vessels with 75,439 crew and 58,984 passengers, or a total of 134,423 persons exclusive of troops, were inspected. Six vessels had cases of smallpox, cholera and chickenpox on board within 12 days prior to their departure.

136 incoming vessels with 14,861 crew and 28,821 passengers and pilgrims were inspected. Of these 29 were found to have infectious disease in the following amounts, *viz.*, of plague 2 cases; of cholera 6; of smallpox 8; of measles 12; of chickenpox 12; of jigger 6; of influenza 32; of pneumonia 6.

General health of shipping. 418 European seamen were admitted to St. George Hospital and 12 died; 735 Asiatic seamen were admitted to J. J. and Gokul Das Tejpal Hospitals and 92 died.

Pilgrim traffic. Outward. 17,113 left Bombay on 19 vessels. Two cases of smallpox were landed at Karachi and Aden. Fifty deaths occurred at sea chiefly due to old age, pneumonia, cardiac failure, tuberculosis, malaria, toxæmia, dysentery, diarrhœa, asthma, phthisis, etc. Two ships were found to be overcrowded on their arrival at Kararan.

Inward. 10,858 pilgrims arrived from Jeddah in 15 vessels and 351 deaths occurred during the return voyage among pilgrims. The chief causes were senile debility, phthisis, dysentery, pneumonia, tuberculosis, heat apoplexy, diarrhœa, heart failure, malaria, privation, etc. Two cases of smallpox were removed from two pilgrim ships on arrival at Bombay and two cases of smallpox and one of measles were landed at Aden and Karachi.

(c) *Port of Karachi*.—Outgoing vessels. 442 steamers were inspected, of these 266 were proceeding to Aden, Red Sea and Europe. 330 country crafts were granted Bills of Health after inspection. 87,918 crew and passengers were inspected.

Incoming vessels. 95 steamers arrived and were inspected. Eight country crafts were inspected. 29,654 crew and passengers were inspected. Of the grand total of 117,572 persons 50,429 crew and passengers had also their clothing, bedding and other articles disinfected. Two deaths from plague and 4 from cholera were reported from incoming vessels. Of the 4 latter one was on a vessel from Bombay and the other 3 on vessels from Gulf Ports. One case was removed at Bander Abas, and a fireman died at Bombay. Three cases of smallpox occurred on incoming vessels; and two cases of chickenpox were reported at Bombay. There were also 1 case of pneumonia 2 cases of measles, and 3 cases of influenza.

Red Sea Pilgrim Traffic. Outward: 14 steamers carrying 7,133 pilgrims sailed from Karachi for Jeddah *via* Aden. Before embarkation the pilgrims were inspected and their clothing, bedding, etc. disinfected. Of these two vessels were thoroughly cleansed and freed from rats by means of Clayton apparatus and the rest all fumigated, 127 dead rats being found on the former and no rats on the latter. One vessel had one case of smallpox.

Inward: 10,670 pilgrims returned to Karachi. They recorded one case of smallpox, one convalescent case of measles; and 300 deaths due to debility, bronchitis, dysentery, chronic malaria, diarrhœa, phthisis, heart failure and old age.

Six steamers were Claytonised—one for plague,—2 pilgrim ships and 3 at the request of the Agents before sailing to ports out of India.

(d) *Port of Aden*.—1,259 vessels and rigged vessels were granted Bills of Health—1,264 Bills of Health were given to dhows. The following cases of infectious diseases were landed: smallpox 6, measles 1, chickenpox 2, and pneumonia 1. 38 vessels carrying pilgrims passed through the port. All were medically examined. These vessels carried 44,591 pilgrims and had had 119 deaths.

(e) *Port of Rangoon*.—1,395 vessels arrived carrying 342,233 passengers; of these vessels 1,386 were visited and 529,825 persons inspected.

Infectious diseases. 34 cases reported by the Commanders of 28 vessels included 6 cases of cholera on six vessels of which 2 died and were buried at sea, 2 were landed at other ports, and 2 were sent to hospital in Rangoon; 6 of smallpox, 12 of chickenpox, 5 of measles, 3 of mumps, and 2 of typhoid. On the above 28 vessels 3 more infectious cases were detected at the medical inspection, *viz.*, 2 cases of cholera and one of chickenpox. Eleven deaths from non-infectious diseases were reported.

448 vessels were inspected under the Vaccination Act of 1919. On 41 of these during inspection cases of cholera 1, smallpox 7, chickenpox 34, measles 7, mumps 2, typhoid 1, cerebro spinal fever 1, were discovered. One case of plague and one of cholera developed in hospital among the suspects sent for observation.

The number of extra vessels inspected under Notification No. 229 of 6th September 1919 comprised 900 cargo and passenger vessels. One case of measles and one of chickenpox developed in hospital among the suspects sent for observation from these vessels: also cholera (one case) and plague (one case) developed in hospital.

As a result of the visits paid under the Regulations of General Department Notification No. 73 of 13th March 1917 the following measures were carried out.

(1) Inspection. The number of passengers under Vaccination Act was 271,851, under Vaccination Act (non-labourers exempted) was 36,166, and under Influenza Notification was 21,794. Total 329,811.

The axillary temperature of 5,646 persons was tested and only 2,745 were found normal. The results of inspection were:—

- (a) 94 infectious cases were detected, *viz.* plague 1, cholera 10, smallpox 13, chickenpox 48, measles 13, mumps 5, cerebro spinal fever 1, typhoid 3. Of these 60 cases were detected during the inspections under Vaccination and Influenza Notifications.
 - (b) Twenty-four cases were sent for examination of gland tissue; no plague bacilli were found.
 - (c) 2,797 suspects were sent to hospital for observation for temperature, diarrhoea and undefined skin rashes, and among these 64 cases of influenza and 31 cases of dengue fever developed.
2. Disinfection of (a) effects of 614 members of crew and 2,693 passengers, and (b) 592 vessels.
3. Fumigation of vessels. Fourteen vessels were fumigated while empty and 496 rats were destroyed. Seven vessels were fumigated to comply with regulations.
4. Vaccination. Labourers and crews numbering respectively 271,851 and 51,534 were inspected for the presence of good, old or recent vaccination marks. Of the former 23,134 and of the latter 82 were vaccinated.
5. Segregation. This can only be imposed in case of those vessels which arrive plague infected.
6. Vessels inspected (incoming, at moorings, or outgoing)—

- (a) Incoming. Nine vessels reported the occurrence of infectious or suspicious disease and underwent the usual measures—one for plague, three for cholera, four for small-pox and one for ordinary death.
- (b) Vessels at moorings in harbour. Seven vessels underwent disinfection measures—4 for cholera, 2 for chicken-pox and 1 for suspicious illness.
- (c) Outgoing vessels. 463 vessels proceeding to ports out of India were inspected. 28,499 Asiatic and African members of the crew and 13,879 deck passengers had their effects disinfected and the 40,447 members of the crew and 19,968 passengers including Europeans were inspected. Of 438 passengers' temperatures tested, 166 were found normal while 173 were allowed to embark on the Commander's responsibility. As a result 2 cases of plague, 1 of measles, 1 of mumps, 8 of influenza, 1 of dengue were detected and 86 cases suspicious because of rise of temperature were detained and sent for observation. New members of the crew

inspected were 2,417, of these 32 were rejected for gonorrhoea, 2 for chancre, 2 for syphilis, 1 for bubo, 5 for hernia, 2 for hydrocele, 2 for tuberculosis and 17 for skin diseases.

7. Anti-rat measures received some attention.

8. Miscellaneous transactions and establishments.—Infectious disease among the employees of Port Commissioners establishment: plague 2, small-pox 3, chicken-pox 23, measles 2, mumps 7, influenza 234 and dengue 4.

(f) *Port of Madras.* Incoming vessels—552 vessels arrived during the year from plague infected areas with 50,694 crew and 72,574 passengers, against 486 vessels with 35,963 crew and 53,865 passengers of the previous year.

Outgoing vessels—236 vessels with 21,700 crew and 22,015 passengers were inspected and granted bills of health against 265 vessels with 28,990 crew and 21,338 passengers of the previous year.

Epidemic and infectious diseases. Three cases of measles with 5 contacts and 1 case of chickenpox were found in steamers that entered the harbour. The disinfection of bedding and clothing of deck passengers and crew landing and embarking from here was continued. The disinfection shed is in charge of a sub-assistant surgeon, and a nurse is employed for examining female passengers. No unusual rat mortality was found on any of the vessels that entered and left the harbour. A Clayton apparatus is maintained in the Port.

Table of Port Mortality.

	BOMBAY.		CALCUTTA.		MADRAS.		RANGOON.		KARACHI.†	
	Deaths.	Death rate.	Deaths.	Death rate.	Deaths.	Death rate.	Deaths.	Death rate.	Deaths.	Death rate.
Small-pox	479	0·39	157	·17	151	0·3	363	1·06	35	0·17
Measles	142	0·11	56	·06	25	0·05	6	0·2	342	1·69
Plague	1,329	1·08	77	...	1	0·002	1,159	3·39	428	2·12
Enteric Fever . . .	137	0·11	460	·5	51	0·1	47	·14	38	0·19
Malaria	3,095	2·53	1,069	1·2	783	1·5	350	1·02	992	4·92
Kalaazar	1	...	501	·55	52	·1	7	0·2	...	...
Relapsing Fever . .	5	...	1	...	2	...	...	...	...	...
Influenza	250	0·20	371	·40	19	0·04	137	·40	19	0·09
Cholera	169	0·15	914	1·0	21	0·04	48	·14	...	...
Dysentery	807	0·69	1,677	...	2,021	3·8	828*	2·45	23	0·11
Tuberculosis . . .	1,371	1·12	2,089	2·3	1,268	2·4	939	2·75	393	1·95
All other Causes . .	30,154	...	18,452	...	15,539	...	8,024	...	4,372	...
TOTAL	37,959	31·11	25,824	29·5	19,933	37·6	11,918	34·85	6,542	32·44

* Includes Diarrhoea.

† For the year 1923-24.

101. **Mines.** *Madras.*—The health of the mining population was reported to be satisfactory and the mines were free from epidemic disease except in Nellore where there were two cases of smallpox with one death. Their water supply and housing were stated to be satisfactory.

Bengal.—Asansol Mines Board of Health. The following tables gives a few particulars regarding vital occurrences in the Asansol Mining Settlement :—

	1922	1923
Births	9,228	8,580
Infant deaths	1,345	1,317
Infant death rate	145	153
Cholera	169	183
Smallpox . . . . .	...	6
Fever	926	692
Dysentery and Diarrhoea	313	275
Influenza	11	8
Respiratory diseases	1,664	1,227
Other causes	3,150	3,523

The Director of Public Health, Bengal, remarks "The work of the Mines Board of Health affords a model to the whole province and is a striking example of the good results that can be obtained by an *ad hoc* sanitary authority under the conditions obtaining in both rural and industrial areas in Bengal."

Burma.—A. Burma Corporation, Tavoy and Mergui Districts, Nanttu. The medical officer as usual reports very fully. The new Asiatic Hospital which accommodates 84 patients is provided with a water carriage system of sewerage. A Thresh disinfectant is in process of erection in the hospital grounds. At Bawdwin a disinfecting apparatus has been provided.

Infectious diseases were not prevalent. Smallpox was absent and no case of plague occurred in the last 18 months. Periodical rat drives accounted for 780 rats. That epizootic plague exists in the Nanttu area is shown by the finding of plague bacilli in the spleens of 4 rats out of 18 examined. Incoming travellers were inspected. No cases of cholera have occurred since 1918. Ten cases of relapsing fever occurred; but with the use of the delousing machine, the disease has been stamped out. Two fatal cases of typhoid fever occurred, in one of which the infection was traced to milk.

Certain special diseases require mention. There was one case of leprosy of mixed nodular and nerve variety; 11 cases of beri-beri with 2 deaths; 7 cases of tuberculosis of which 5 were positive for tubercle of lungs. No case of tubercle of lungs could be ascribed to working in the mines. 10,768 cases of malaria were treated and there was one case of black water fever. 128 cases of plumbism occurred against 330 in 1922.

B. Tavoy.—The dispensary remained in charge of a compounder; the appointment of a qualified medical officer is desirable.

Bihar and Orissa.—Jharia Mines Board of Health. The population of these mines was 453, 948, and vital statistics show.

	Number.	Ratio 1923.	Ratio 1922.
Total births	1,701	20.3	23.2
Total deaths	1,381	16.5	16.2

	Attacks.	Deaths.	Death ratio 1923.	Death ratio 1922.
Cholera	208	72	.8	.2
Smallpox	497	28	.3	.02
Influenza	695	7	.08	...
Plague	<i>Nil.</i>	...	...	...

102. Industrial Workers.

Bombay.—Twenty-two mills and factories were visited in the Bombay suburban Thana and Kolaba districts. Generally speaking the larger ones showed adequate arrangements to preserve the health of the workers; but owners of smaller concerns seemed to give little consideration to these points.

In the Southern Registration District 46 factories were systematically inspected. The Assistant Director of Public Health thinks that it is desirable for factories to commence the recording of health statistics of factory hands and to keep registers with the assistance of their own medical officers, that the post card system of notifying the chief epidemic diseases should be introduced in all factories, that records as to height, weight and age of each worker should be kept, and that every worker in a factory should be given an annual fortnight's holiday. Among other suggestions the provision of a first aid outfit in every factory, every encouragement for regular employees to learn first aid work, and the introduction of improvements in latrine accommodation are rightly advocated.

103. Railways.—Only three reports are available.

1. *South Indian Railway.*—The staff consisted of 4 officers, 8 assistant surgeons, 27 apothecaries, and 26 compounders. The admissions during the year were 20,144, being a decrease of 7,704 over last year's admissions. The chief point of note is this decrease in the number of admissions for all causes including fevers, the decrease in fevers being 3,914. This is largely due to diminished personnel, absence of dengue and influenza, and better health conditions. All mail trains are now equipped with First-aid accident boxes and shortly all express trains will be similarly equipped.

2. *East Indian Railway.*—A total of 252, 668 cases excluding casual labour were treated by the medical department of this Railway. The primary causes of sickness were malaria and dysentery which give a case incidence of 33,900 and 3,765. During

the past three years a slight decrease in the incidence of malaria has been recorded both among the staff and dependents. This has probably been largely contributed to by the prophylactic work done. The medical staff, as in other industrial departments, have to contend against false sick-reporting and false medical certificates. An anti-rabic inoculation centre for the staff and families of the Railway was established at Allahabad.

3. *Madras and Southern Mahratta Railway.*—There were 74 deaths reported during the year among the employees treated by the Company's medical staff. Plague was responsible for 93 cases of which 26 proved fatal.

SECTION IV.

Jails of India.

PART I.—POPULATION, SICKNESS AND MORTALITY RATES.

104. The average Jail population in 1923 was 1,29,049 with a mean of 1,20,910 as against 1,30,516 with a mean of 1,18,249 in 1922. Excluding the Andamans the population rose from a mean of 1,08,980 to 1,19,456. The five provinces of Burma, Bihar and Orissa, United Provinces, Punjab, and Madras record an increase of population, this being greatest in the United Provinces and in the Punjab. As in previous years, overcrowding in various sections of the Jails has been recognised and in most cases has been adequately dealt with, in so far as this was possible, pending completion of extension or other building schemes. Any sudden influx as a result of political crime and rebellion must always put a heavy strain on jail accommodation; but this feature was less noticeable in 1923 than in the previous year. The reduction in the average strength of the Andamans continued and incurably sick transfers from tubercle of the lungs arrived in numbers and helped to swell provincial sickness and mortality rates besides adding to the risks of other convicts in jails where absolute segregation was either non-existent or badly provided for.

105. The constantly sick rate—27—was lower than that of 1922 and of the decennial mean which were 31 and 32 respectively. The admission to hospital rate (740·8) also showed a reduction over that for 1922 (746·9) and over the decennial mean (767·4). Excluding the Andamans, however, the admission to hospital rate (735·8) was in excess of both that for 1922 (546·6) and the mean (689·6). The constantly sick rates of Burma, United Provinces and North-West Frontier Province showed increases over the decennial mean, while those of Bombay, Central Provinces, Bihar and Orissa, Punjab, Madras, Bengal and Assam showed decreases. Burma showed a constantly sick rate of 5 over mean—the same as in 1922,—and an admission rate of 1030·4—nearly twice that of 1922. North-West Frontier Province showed a constantly sick rate of 8 over mean and 4 under that of 1922 and admission rate of 1030·9 which is well under that for 1922. Assam showed 10 under mean and 10 under 1922 with an admission rate of 804·7 which is well below that for 1922. Bengal showed 9 under mean. Punjab 6 under mean and 1 under 1922 with an admission rate of 876·7 which is well under that of 1922. Madras, though showing 1 under mean, shows 15 under that of 1922. This is mainly due to a return to more normal conditions after the Mappilla rebellion.

106. The admission rates (all causes) were above the mean in Burma, Bihar and Orissa, United Provinces, Punjab and North-West Frontier Province, and in excess of 1922 in Burma, Bihar and Orissa, Central Provinces and Andamans; they were below the mean in Assam, Bengal, Central Provinces, Bombay, Madras and Andamans and

below the figures for 1922 in Assam, Bengal, Bombay, Madras, United Provinces North-West and North-West Frontier Province. The figures for Burma and North-West Province in the increases, and for Assam, Bengal, North-West Frontier Province, Orissa and Andamans in the decreases, are the most significant and striking.

107. Death rate, excluding the Andamans, was 14.95 and including them was 16.4. These are both well below those for 1922 (20.8 and 20.69) and below the decennial averages (22.2 and 23.4). The death rates were below the mean in all the administrations, the most noticeable being those of Bihar and Orissa, Bombay, North-West Frontier Province and the Punjab. Further, it was below that of 1922 in all administrations except those of Assam, Bihar and Orissa, Punjab and Andamans. Of those recording increases, the Andamans was the chief. The Andamans' death rate, though well under the decennial rates, was 9.9 over that for 1922.

Dysentery, infective enteritis and malaria contributed. The Punjab death rate was 3.2 in excess of that for 1922 though 9.4 below the mean. This was due to the increased mortality from pneumonia and other respiratory diseases, the incidence of which had been enhanced in all probability by the prevalence of malaria. That of Bihar and Orissa was 2.5 in excess of that for 1922 though 13.6 below the mean. The reason was largely on account of the unhealthiness of Gaya Central Jail in which 1/3rd of the total deaths (39) occurred. That of Assam was 7 in excess of that for 1922 but 1.6 below the mean. This may have been due to the admission of a larger number than usual of drug addicts with consequent loss of stamina.

The sickness and mortality figures just commented on again afford ample evidence, as has been pointed out in previous reports, of the care with which the medical side of provincial jail administration is being run in spite of the difficulties dictated by the need for financial economy in the various administrations. This will appear more evident in part IV of this note when each province is dealt with individually.

PART II.—CAUSES OF SICKNESS AND MORTALITY.

108. The principal causes of sickness in order of priority were malaria (198.6), abscess, ulcer and boil (50.4), dysentery (48.6), respiratory diseases including pneumonia (44.2), diarrhoea (29.0), pyrexia of uncertain origin (18.7), influenza (12.3), tubercle of lungs (8.0), anæmia and debility (6.2). The order of incidence is much the same as in 1922; but all have decreased in amount. The principal causes of death in order of priority were respiratory diseases including pneumonia (3.55), tubercle of lungs (2.68), dysentery and diarrhoea (2.45), malaria (1.01), enteric fever (.28), anæmia and debility (.19). These all show a decrease over the figures for 1922.

It is difficult to estimate the effect of the administrative factor in such reductions as those recorded above; but, allowing for a healthier season, for less political crime, and for smaller numbers of unhealthy admissions on account of these factors, we are, I think, justified in ascribing some of the reduction at all events to efficient medical administration.

Infectious diseases were largely absent.

109. *Influenza*.—There were 1,588 admissions and 10 deaths as against 3,191 and 156 in 1922. Bengal, Bihar and Orissa, and Central Provinces suffered most with 473, 240, and 126 cases respectively. The Andamans also suffered mildly.

110. *Cholera*.—There were 10 cases and 6 deaths. 6 of these occurred in Bengal and 1 each in Burma, Bihar and Orissa, United Provinces and Central Provinces.

the past th among the *Small-pox*.—There were 56 cases and 1 death against 41 and 4 deaths in 1922. Orissa suffered most.

112. *Dysentery* was responsible for 6,266 admissions and 269 deaths against 446 and 534 in 1922. This is a gratifying reduction but can be improved on doubtless.

The case mortality (2·08) was the 3rd highest; the Andamans and Bihar and Orissa suffered worst, followed by Bengal, Assam, Central Provinces, and Madras. The actuals for Bengal, Bihar and Orissa, and the Andamans equal almost one-half of the total admissions. In the Andamans there were twice as many admissions and five times as many deaths as in 1922 (25·2% amœbic, 71·8% bacillary); maximum prevalence being between April and September (the rains); and exciting cause was said to be the rapidly growing moulds on the dhal and rice.

113. *Diarrhœa*.—3,745 admissions with 48 deaths were recorded as against 4,569 admissions with 55 deaths in 1922. Diarrhœa and Dysentery are so inter-related that in the absence of expert bacteriological standardised diagnostic methods it is convenient to slump them in order to obtain a true picture of this type of disease. The tabular statement which was begun last year and shows the admission and death rates in the different administrations for Dysentery and Diarrhœa combined, and for the mean of the 10 years 1911-1920, for 1921, and for 1922, has therefore been continued so as to enable comparisons to be instituted with 1923.

Table showing ratios for Dysentery and Diarrhœa combined.

	ADMISSION RATE.				DEATH RATE.			
	10 years Mean.	1921.	1922.	1923.	10 years Mean.	1921.	1922.	1923.
Burma	31·9	53·4	52·9	39·9	2·28	2·17	1·85	1·23
Assam	271·1	213·6	242·7	121·0	6·09	3·38	3·86	3·58
Bengal	294·5	206·3	213·4	192·9	5·62	2·66	3·67	2·8
Bihar and Orissa	211·8	325·1	248·0	347·26	10·03	5·48	3·41	5·97
United Provinces	48·2	60·7	53·2	40·3	2·91	3·08	2·09	1·9
Punjab	68·7	52·5	50·4	30·3	2·2	1·11	0·41	·84
North-West Frontier Province	72·9	48·6	53·0	40·9	3·75	3·15	3·03	·90
Central Provinces	62·8	77·8	63·5	92·5	4·23	6·37	5·49	3·39
Bombay	83·7	71·1	80·3	75·6	2·16	1·50	0·99	1·47
Madras	88·1	25·6	113·1	51·09	1·81	1·55	18·78	2·81
Andamans	118·4	75·21	57·8	97·1	5·67	1·34	1·38	7·54

The table shows that Bihar and Orissa, the Central Provinces, and Andamans recorded big increases in admission rates in 1923 over 1922 while all the others fell; some such as Assam, Punjab, and Madras by as much as 50 per cent; further, that Bihar and Orissa, Punjab, Bombay, and Andamans recorded increases in mortality

whilst the others showed a reduction which was especially marked in the North-West Frontier Province and Madras. Gaya, Bhagalpur and Buxar in Bihar and Orissa were largely responsible (*vide* Part IV); Andamans and North-West Frontier Province transfers and 'Flag' prisoners were the chief causes of the Central Provinces increase.

114. *Malaria*.—The admissions numbered 26,900 and the deaths 131 as against 27,413 and 130 in 1922. Excluding the Andamans, the admission rate of 198·6 was below that of 1922 (204·7) but well above the mean 168·4. The highest rates were in North-West Frontier Provinces (514·4), Punjab (404·1), Andamans (330·7), Bengal (298·5), Assam (250·8), whilst the most serious rises occurred in Assam, Punjab, Central Provinces, and Bombay. The mortality rate (1·01) was low but varied provincially between 3·02 in the Andamans, 2·42 in North-West Frontier Province, 1·79 in Assam, 1·60 in Bengal, 1·18 in the Punjab and ·24 in the Central Provinces.

In the Andamans the drop below mean, already recorded in 1922, persisted in 1923 though there was an increase over that of 1922 (30 yrs. mean. % to admission 59·35; 1922, 36·33; 1923, 41·12), % mortality was less (11·42 as against 15·61 in 1922). Anophelines were in excess early; intensive quinine treatment and post malarial gangs were continued. Of 2,059 positive admissions 55·8% were benign tertian, 39·5% were malignant tertian, 4·7% were quartan.

115. *Pneumonia*.—Excluding Andamans, 1,591 admissions with 350 deaths (*i.e.*, 13·3 admission rate and 2·9 death rate as against 13·4 and 3·42 in 1922). Pneumonia shows the highest mortality rate (2·92) and is apparently most fatal in North-West Frontier Province and Assam and least so in Burma. In the Andamans though the case mortality rose from 40·6 to 45·7, incidence decreased (63 cases as against 91 in 1922, 154 in 1919, 216 in 1918). Malone's recent research work and other experimental work now being undertaken on therapeutic and prophylactic vaccines for this disease will, it is hoped, in due course, help to reduce its mortality.

116. *Tubercle of the Lungs*.—Excluding Andamans, 997 admissions with 326 deaths, *i.e.*, an admission rate of 8·3 and a death rate of 2·78 (the 2nd highest) show that the disease cannot be regarded lightly. The provincial admission rates varied between 10·6 in Bengal, 10·5 in Burma, 9·7 in Madras, 9·4 in Assam and North-West Frontier Province, 9·02 in the United Provinces, and 4·1 in the Punjab. The remarks in the Public Health Commissioner's note of 1922 in regard to the value of a properly equipped tuberculosis jail to any administration, as evidenced by that now in use in the Punjab, would seem to be worthy of the closest attention by all provincial administrations. This has to be emphasised again in view of the return of so many tubercular cases from the Andamans to Indian Jails, for these, if not adequately provided for in regard to accommodation, will augment the numbers of lives at grave risk in the different jails where they may be housed.

Madras has opened a ward at Bellary, and is treating numbers in the Central Jail at Trichinopoly. Financial considerations have held up the scheme for a Tuberculosis Jail at Madanapalle, though an alternative is suggested in the old Indian Station Hospital at Bellary. The latter is indicated if the former can not be afforded.

Bombay has a tuberculosis ward under construction at Hyderabad Central Prison.

Bengal has special wards at Suri and Comilla.

Central Provinces.—Chhindwara Sub-Jail has been allocated as a tubercular jail.

North-West Frontier Province.—A 7 bedded ward at Abbottabad would appear to be quite inadequate.

Burma has a special ward at Myingyan.

Andamans are paying special attention to early diagnosis. There were 34 admissions with 14 deaths.

PART III.—WEIGHT OF PRISONERS. HEALTH OF PRISONERS AS EVIDENCED BY WEIGHT.

117. The following table shows in percentages the condition of prisoners on discharge:—

Provi ce.	Gained weight.	Stationary.	Lost weight.
Madras	73.09	17.11	9.80
Bombay	54.4	25.3	20.3
Bihar and Orissa	56.70	26.96	16.34
Bengal	48.00	30.5	21.8
United Provinces	62.72	29.07	8.21
Punjab	46.6	34.00	17.4
Central Provinces	55.00	30.00	15.0
Assam	56.77	20.85	22.38
North-West Frontier Province	43.4	29.8	26.8
Burma	56.59	28.43	15.00

Few lose more than 5 lbs. unless suffering from illness. The loss is in most cases beneficial and it indicates a toning up of the system by regulated work and exercise.

PART IV.—SPECIAL REMARKS ON PROVINCES.

118. *Madras*.—The medical history of the provincial jails, besides furnishing interesting matter, shows a degree of medical organisation which generally speaking, is highly satisfactory from the provincial point of view. Though overcrowding took place in Rajahmundry, Bellary and Palamcottah, it was temporary and was legislated for. The features of the year were the fall in the total jail population due to the discharge of rebel prisoners and with it, a consequent reduction in sick and mortality rates; an increase in admission of state prisoners; decreases in admission of habituals and juveniles, in numbers of offences and punishments, in cost per head, in the total accommodation due to handing back of buildings used for rebels; the opening of a special tuberculosis ward with 12 beds at Bellary and of accommodation for lepers and Europeans in Salem. Mappila prisoners (meat eaters) got dhall and meat instead of a full dhall ration; otherwise dieting was undisturbed.

Vital statistics show very good figures—the best for some years—with a death rate of 16.54 as against 50.41 in 1922 and a big reduction in the daily average sick. 46 per cent. of the deaths occurred in Mappilla rebels and over 30 per cent. of these died within six months of admission. Cholera was absent; but a gastro-enteritic epidemic due to carrier infection occurred in November in Allipuram Jail and caused 7 deaths. Cannanore jail had the highest death rate due to its being a clearing house for the Mappilla prisoners, nearly all of whom were debilitated from hookworm infection.

Again I have to record the close co-operation of the jail staff and the research unit from the King Institute, Guindy, in regard to the gastro-enteritis outbreak and the

hookworm infection. This is as it should be, and extended to the Public Health Department as well. It enabled the Inspector General to say that 'even an unhealthy jail if medically controlled effectively can be kept fairly fit.'

Dysentery amongst hookworm-infected prisoners required assiduous and continuous medical effort which met with success. Ankylostomiasis caused 21 deaths. 61.29 per cent. of the prisoners examined were found infected and its incidence was widespread. Examinations for enteric carriers amongst those working with food and water, chlorination of drinking water by hand and automatically, development of artesian wells, careful incineration, conservancy, central laundries, Thresh and other steam disinfectors, erection of bathing cubicles, all show a continuous enlightened policy of hygienic improvement which must bear fruit in better vital statistics than any yet recorded.

119. *Bombay*.—With accommodation for 9,684 and a daily average of 10,179 there was overcrowding in 12 jails. This is no new feature. The new Central Jail, Hindalgi, Belgaum has been taken over and will relieve overcrowding at Bijapur, Yeravda, etc. A new under-trail jail for the city of Bombay for 365 persons is under construction and a scheme is under preparation for a central jail at Nasik with accommodation for 1,920 prisoners. A new separate female jail at Yeravda is noted as necessary. It is to be hoped that financial considerations will allow of these schemes maturing. The year was considered a very healthy one and the daily average strength in hospital (281.1) and death ratio per mille (10.9) were well below those for 1922. Though Yeravda receives "unfits" and has tuberculosis wards, its death rate (14.3) was low; Deccan convict gang death rate (5.4) was the lowest for 12 years; Bijapur district jail death rate (17.3 per mille) was due to an influenza outbreak; Thana special jail death rate (26.5 per mille) was due to direct admissions in bad health.

Pneumonia, diarrhœa, dysentery, and malaria were all less than in 1922.

All (the) admissions were inoculated against plague if it was prevalent; quinine was issued prophylactically once or twice weekly during the malarial season; special attention was devoted to scaling of teeth. Dietary costs fell owing to cheapening of grain.

120. *Bengal*.—Though the average population was less than the accommodation available there was overcrowding (relieved by transfer) on the daily average of strength of convicts and under trials. The daily average sick rate (42 per mille) and mortality (5.0 per mille) rate were lower than in 1922. Inspector General of Jails attributes this mainly to chlorination of water and sanitary precautions regarding food, and hopes to lower mortality to 12. He advocates issue of tobacco and has been able to introduce many minor improvements in clothing, hospitals and nursing, diets, and work for under-trials, and in abolishing solitary confinement in accordance with the Jail Committee's recommendations. Juvenile admissions decreased by over 50 per cent. Costs of dieting, hospitals, and sanitation all decreased. Malaria, dysentery and diarrhœa headed the list of causes of morbidity, and tuberculosis, dysentery, pneumonia, malaria, those of mortality. Cholera (5 cases), dysentery, malaria and pneumonia decreased; tuberculosis admissions increased from 126 to 154. The special wards for tubercle at Suri and Comilla are described as very useful; but the remarks in Part III of this report apply.

The unhealthiest jails were those of Rangpur (35.7 per mille), Mymensingh (34.4) and Khulna (30.5).

121. *Bihar and Orissa*.—The accommodation was increased by 32 and the new subsidiary jail at Jamshedpur can take 46. Part of Monghyr jail became a subsidiary jail thus reducing by 1 the central and district jails.

The daily average jail population increased (5,955.60 as against 5,797.97) partly as the result of 200 transfers from the North-West Frontier Province. Juvenile admissions increased. The juvenile jail at Monghyr is apparently doing good work. Habituals

cannot be adequately housed at the Buxar Central Jail. Dietary and hospital costs fell due to lower prices and grain storage ; sanitation charges increased. The water supply at Buxar Jail was almost completed.

The daily average population increased, the daily average sick rate was lower than in 1922, but the mortality rate (19.4) was higher. Gaya (50.4 per mille), Buxar (26.2 per mille), and Bhagalpur (14.5 per mille) were the 3 jails with increased mortality ; the two former had many admissions in bad health. Dysentery was chiefly responsible (1,134 cases and 28 deaths as against 531 and 15 deaths in 1922). Bhagalpur, Gaya, and Buxar all suffered with 468, 322, and 138 admissions against 36, 97, and 99 respectively in 1922. In Bhagalpur, 292 cases occurred in August and September ; in Gaya 284 in the 2nd six months (5 per cent. amœbic, 7 per cent. with hookworm and spleen, and 88 per cent. bacillary) ; in Buxar 118 occurred in the first six months. The Public Health authorities assisted in the investigations. Malaria, pneumonia, tuberculosis and influenza decreased. Ankylostomiasis had a definite and serious effect on most of the dysentery cases. Of 12,375 examinations made, 54.13 per cent. were positive. Prisoners are all examined. Leprosy is treated at Muzaffarpur Jail on modern lines. Filariasis was investigated at Puri by the Civil Surgeon who continues his researches there.

122. *United Provinces*.—The daily average population rose from 26,783 in 1922 to 27,949 in 1923 ; but there is a general fall in the convict admission rate over the last 20 years. There were 100 transfers from the North-West Frontier Province. Juvenile admissions decreased. The Inspector General thinks that with more latitude, less fetters and abolition of solitary confinement, prisoners will respond. Dietary, hospital and sanitation costs per head decreased. Daily average sick rate rose (619.49 as against 586.24 per mille) ; the mortality rate decreased (13.2 as against 14.6). There was no epidemic disease.

Of Central Jails, Agra had the lowest death rate (5.4 per mille) and all were below the average except Allahabad (22.1 per mille) ; but malarial saturation was excessive at the Inspector General's visit in December and he proposed remedies for this and on was general crowding.

Of the District jails, 12 had mortality rates over 20.0 per mille. Of these, Sultanpur (116)—the Tuberculosis jail—had 37 deaths from tubercle of the lungs out of 39 ; Banda, Bijnor and Bareilly followed in order. Malaria, abscesses, etc., dysentery and diarrhœa, and pneumonia, were in order the commoner diseases ; pneumonia, tubercle of lungs, dysentery and diarrhœa and malaria were in order the commoner causes of death.

Admission rate for malaria was less than in 1922. The issue of quinine prophylactically was not general. Leprosy is still treated at Rai Bareilly on modern lines. Its treatment caused mitigation of suffering and was much appreciated.

167 transfers from the Andamans arrived to clog the infirm gangs, and 19 of these died during the year.

123. *Punjab*.—The accommodation rose by 100 and, though still very inadequate, it was supplemented by tents within barbed wire inside the jail walls or by utilising workshops. The Inspector General says there was no overcrowding in the dormitories ; but that 2 more central jails are required. Camp jails were closed and Multan District Jail functioned as a camp Central Jail under a whole-time Superintendent. After the Akali releases it reverted to being a district jail.

The average strength was 78 in excess of that of 1922 and admissions included 725 transfers mainly from the North-West Frontier Province. Lepers were housed in Mianwali in a special ward. Food costs per head decreased as did also hospital costs.

The admission to hospital ratio per mille of average strength decreased (862 from 885), the daily sick rate decreased (29 from 30), but the mortality rate rose (14.13 from

11-22). The highest mortality rate was in Shahpur (132.08) where tubercle is treated and where there were 35 deaths, 11 of which occurred within 1½ months of arrival. Pulmonary tubercle incidence decreased. Malaria was the commonest disease and pneumonia and tubercle the commonest causes of death.

Dysentery was said to be extinct practically from the Central Jails and diarrhoea to have decreased; but it is observed that 529 admissions and 5 deaths were recorded from colitis which is very often real dysentery. Malaria admissions doubled, in part on account of the research work of Major J. A. Sinton, V.C., O.B.E., I.M.S., under the Indian Research Fund Association. With this increase was associated much pneumonia. Influenza occurred in Montgomery and Mianwali. Relapsing fever (121 admissions) occurred in 7 jails without spreading; Hissar, Lahore Central, and Pindi were chiefly affected.

124. *Central Provinces*—There was temporary overcrowding of undertrials at Bilaspur, Saugor, Hoshangabad, Yeotmal, Seoni, but this was arranged for. By the reduction of Raipur Jail, Central Jails decreased by 1 and District Jails increased by 1. Chhindwara sub-jail has been allocated as a tuberculosis jail. The jail population had decreased by December 31st. Admission of convicts increased by 1,076, 389 of which were transfers [from North-West Frontier Province (200) and Andamans (149)]. Juveniles increased owing to the Flag movement.

Dhal was reduced from 3 to 2 chittags daily for male labouring prisoners and from 2 to 1½ for non-labouring males and all females and for all undertrials.

Total cost per head and dietary costs decreased while sanitation costs per head rose.

The daily average strength decreased (4,576 to 4,460); admissions to hospital increased (1,618 to 1,731); mortality decreased (92 to 87 or 20.10 per mille to 19.47 per mille).

Dysentery and diarrhoea, influenza, abscesses, and malaria were the chief diseases. Dysentery and diarrhoea, malaria, debility, all increased; pulmonary tubercle, pneumonia, and influenza decreased. The anti-hookworm campaign continued as before.

125. *Assam*.—The general health was actually better though the year was an unlucky one for mortality. The average jail strength fell by 396.26 to 2,519.05; but the separation of habituals and casuals was perfunctory. The Inspector General passes a severe indictment on the want of sympathy between superior jail staff and warder staff whose training and quarters are bad and who are often overworked. The accommodation was reduced by 89 beds, due to the abandonment of Gauhati. Additions are said to be in progress.

The daily average number of prisoners dropped (2,915.31 to 2,519.05) as did also the daily average of sick (124.47 to 83.91) but the death rate rose from 22.98 to 23.82 which places this province at the top of the provincial list in heavy mortality.

The worst jails for sickness and mortality were Kohima, Shillong, Tezpur, Dhubri, Gauhati, and Nowgong. There are many drug addicts. There was a heavy mortality in the early months of imprisonment. Malaria, dysentery, diarrhoea, pneumonia, tubercle, and ankylostomiasis were the chief diseases; and tubercle, pneumonia, dysentery, malaria, in order were the chief causes of mortality. Dysentery decreased (132 against 396), carriers being segregated; pneumonia decreased while tubercle and malaria remained much as in 1922.

Quinine exhibition will be begun again.

The tubercle problem is an urgent one and a tubercle ward is suggested at Gauhati.

Ankylostomiasis and Pyorrhoea infections are being treated systematically as usual.

Costs per head increased.

126. *North-West Frontier Province.*—Chronic overcrowding persists, accommodation being for 2,611 with a daily average of 3,228. Tents, workshops, and transfers to other provinces met the difficulty. Peshawar and Dehra Ismail Khan were worst situated. A new Central Jail for 500 with additional factory space is required. A whole-time super intendent for Dera Ismail Khan was sanctioned.

The total number of admissions was almost the same as the last 5 years' average. Of these 550 were transferred to other provinces. The daily average strength was less than in 1922, as were also the admission rate and mortality rate.

Malarial admissions dropped by nearly 50 per cent.

Tubercle of lungs was treated in the small 7-bedded and inadequate ward in Abbottabad and the excess sent to Shahpur (Punjab). Dieting costs per head decreased; but sanitation costs rose owing to the provision of 2 disinfectors for Peshawar and Dera Ismail Khan at a cost of Rs. 17,900.

127. *Burma.*—Total accommodation decreased by 91 owing to closing of Myanaung Jail and, excluding hospital and observation cells, there was accommodation for 16,680 with an average strength of 16,287. Central Jail at Tharrawaddy now being built will contain 1,500. Two subsidiary jails are to be built at Pakokku and Kyaikto but the Pegu Central Jail is meanwhile shelved. The proposed site for the Leper jail being unhygienic, they are being kept in Pagan and other Central Jails till further decisions *re* building are made. Now that Rangoon Central Jail is to remain, alterations will be carried out and other Rangoon projects are cancelled.

Average strength remains much the same; hospital admission rate has doubled and mortality rate has decreased (12·53). Dietary and sanitation charges have increased, hospital charges have decreased. Tobacco (cheroot) is being issued with different opinions *re* its value in jail life. An increased daily average sick rate may mean more care and not more sickness. Dysentery, diarrhoea, pulmonary tubercle, and enteric have diminished, malaria and pneumonia have increased. There is much "quartan" malaria at Bassein; and Kyaukpyu is very malarious. The tubercle wards in Myingyan had 68 admissions and 17 deaths. Enteric in Rangoon should be combated by T. A. B. inoculation. Beri Beri (10 cases) arose not "de novo" but in jails from cases coming from police camps and lock-ups especially in Pakokku district.

Ankylostomiasis infection (7,910 admissions and 1 death) increased owing to more careful diagnosis by the Sub-Assistant Surgeon working under the Director, Public Health Burma. Results vary from an 80 per cent. infection in Insein and Rangoon to a 10 per cent. infection and under in Shwebo and Magwe, upper Burma being less affected than lower Burma. 10·08 per cent. of admissions used opium especially at Bhamo, Akyab, and Magok; and the traffic seems to be reviving.

ANDAMANS.

128. The total population (9,593), both male and female, fell by 591. The female jail was closed; the four districts had 300 to 600 convicts below existing accommodation.

Daily sick rates and mortality rates of labour convicts increased, *e.g.*, 46·97 and 35·46 as against 35·43 and 19·66 for 1922. Those of self-supporting convicts were 14·81 and 14·84 as against 12·48 and 16·17 in 1922.

The self-supporting convicts increased; but, being under less medical supervision, they were a factor in raising the daily sick rate, as was also the desire for transfer to India as chronic invalids.

The daily sick rates for European Troops, Indian Troops, Police, and self-supporting convicts all rose, and the opinion is that the year was a bad one. Convict admissions were 7,714 (7,643 in 1922) and deaths 254 (173 in 1922). Annual mortality comparisons are likely to be erroneous in view of the changed conditions and transfers to India of those with chronic diseases.

The priority order of admissions was :

Malaria (41·12), dysentery and diarrhoea (12·08), injuries (8·24), respiratory diseases and pneumonia (4·29), venereal (2·02), influenza (1·69), ankylostomiasis (·52), tubercle of lungs (·44), sprue (·42) *et seq.*

The priority order of mortality was :

Dysentery and diarrhoea (28·35), malaria (11·42), pneumonia (11·42), sprue (6·69), tubercle of lungs (5·51), enteritis (4·33), respiratory diseases (3·15), venereal (1·97), blackwater fever (1·18) *et seq.*

Those on dry diets increased ; but fish was not any more plentiful—in fact, in some instances, was very scarce, and vegetables fell off in quantity owing to the lack of labour it is said. This is an important economic factor which should be watched carefully in its relation to scurvy, seventeen cases of which were reported (9 in 1922).

Perhaps the Inspectors General of Prisons would provide, as asked in 1922, statements in subsequent reports showing the number of cases received back from the Andamans, the number of admissions to hospital subsequent to arrival in India and the number of deaths stating the period which has elapsed between arrival and death. This will furnish the necessary correction figure.

The central laboratory proved very helpful.

At the end of the year no lepers remained and only 3 lunatics, 4 and 16 respectively, having been transferred to India.

Seven cases of infective jaundice (Weil's disease) are reported ; but the causal organism was not recognised, nor were they associated with malaria.

No swamp reclamation was effected.

CONCLUSIONS.

129. The records, statistical and other, which have been analysed in the foregoing notes on the various provincial jail administrations once again show what my predecessors have repeatedly stressed that, despite the heavy incubus which must rest on all jail health administrations owing to the fact that prisoners are drawn from a population heavily infected with certain diseases calculated to weaken their stamina, the care exercised by very capable administrative and executive medical officers has achieved and continues to achieve results which can only be considered under the circumstances as highly satisfactory. Though amelioration is to be desired and is no doubt possible, and though the uncertain element of political admissions may at times disturb the balance in the wrong direction in certain provinces, yet before we can arrive at a stage suitable for instituting fair comparisons with vital statistics in home jails, we must await the development of a higher standard of public health throughout the civil community generally. This can only come when the public health conscience of the country has been effectively awakened.

SECTION V.

Vaccination against small-pox.

130. The following table gives details for vaccination :—

Province.	TOTAL NUMBER OF VACCINATIONS PERFORMED.		PERCENTAGE OF SUCCESSFUL CASES TO TOTAL VACCINATIONS.		Average cost of each successful case.	Number* of deaths from small-pox.	
	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.			
Delhi	{ 1922-23	14,947	4,063	97.45	63.53	Rs. A. P. 0 4 9	22
	{ 1923-24	15,226	4,762	97.98	70.05	0 5 0	67
Bengal	{ 1922-23	1,526,385	479,755	95.7	59.1	0 3 9	7,864
	{ 1923-24	1,590,576	467,148	95.9	56.8	0 3 9	4,236
Bihar and Orissa	{ 1922-23	967,027	35,862	99.56	63.30	0 2 6	2,560
	{ 1923-24	1,001,650	41,614	99.49	65.44	0 2 4	3,161
Assam	{ 1922-23	800,895	75,552	94.99	63.01	0 4 7	2,610
	{ 1923-24	813,594	71,985	95.58	59.32	0 4 5	3,213
U. P. of Agra and Oudh.	{ 1922-23	1,175,212	63,197	96.44	69.89	0 4 10	242
	{ 1923-24	1,251,387	58,761	91.53	63.70	0 4 10	747
Punjab	{ 1922-23	649,058	253,378	96.67	69.40	0 5 4	1,608
	{ 1923-24	674,203	269,060	97.78	70.62	0 5 2	2,140
North-West Frontier Province.	{ 1922-23	113,967	30,188	98.30	88.48	0 2 7	104
	{ 1923-24	103,387	19,363	97.96	87.66	0 2 9	94
Central Provinces and Berar.	{ 1922-23	387,498	41,793	99.06	59.82	0 8 3	407
	{ 1923-24	453,452	42,946	98.85	59.13	0 6 10	275
Madras	{ 1922-23	1,436,041	325,588	79.2	34.0	0 7 10	22,301
	{ 1923-24	1,565,706	346,859	90.0	42.6	0 8 9	24,434
Coorg	{ 1922-23	8,507	6,009	95.62	70.56	0 7 8	1
	{ 1923-24	8,108	6,987	96.33	68.68	0 7 4	13
Bombay	{ 1922-23	633,689	99,143	99.66	43.54	1 3 0	1,170
	{ 1923-24	631,923	112,271	99.72	47.81	1 1 1	2,811
Burma	{ 1922-23	523,901	178,558	98.10	53.80	0 9 2	1,439
	{ 1923-24	543,375	209,310	98.37	46.86	0 9 3	2,846
Ajmer-Merwara	{ 1922-23	14,289	614	92.46	94.46	0 6 0	8
	{ 1923-24	13,529	723	88.84	97.12	0 6 5	42
Total	{ 1922-23	7,751,411	1,593,695	93.99	58.76	0 6 5	40,836
	{ 1923-24	8,182,066	1,652,394	95.66	57.83	0 6 4	44,034

* The figures in this column are for the calendar year 1923.

The vaccination operations have increased from 9,345,106 (7,751,411 primary and 1,593,695 revaccinations) to 9,834,460 (8,182,066 primary and 1,652,394 revaccinations). The increase was evidenced in all the provinces except in North-West Frontier Province and in Ajmer-Merwara. The decrease in the former is attributed to reduction in, and in efficiency of, vaccination staff.

In *Madras* the percentage of successful primary operations rose from 79·2 in 1922-23 (the lowest) to 90·0 during 1923-24. This is very satisfactory. The highest percentage was noticed in Bombay (99·72) and the lowest in Ajmer-Merwara (88·34).

Small-pox mortality rose from 40,836 in 1922 to 44,084 during the year under report. Of this *Madras* alone is responsible for 24,434 deaths.

The following table gives the results of vaccinal operations as tested by inspection :—

	NUMBER INSPECTED.		SUCCESS RATES AFTER INSPECTION BY					
	Primary.	Re-vaccinations.	Civil Surgeons and Asst. Directors of Public Health.		Deputy Superintendents of vaccination.		Divisional Inspectors.	
			Primary.	Re-vaccinations.	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.
Punjab	510,467	152,519	92·59	54·54	96·14	67·11	97·78	70·62
Bombay	212,891	4,884	84·57	27·31	98·57	30·93	...	...
<i>Madras</i>	1,264,312	216,345	91·4	56·1	88·0	38·1	...	...
Bihar and Orissa	611,078	17,994	92·44	52·58	96·86	52·93	97·31	78·55
Assam	183,114	32,443	88·76	50·40	87·33	55·51	...	...
Bengal	844,525	92,928	*96·06	62·9	90·9	32·8	96·03	59·1
North-West Frontier Province.	88,870	13,726	93·13	63·63	98·59	84·99	...	...
United Provinces	673,593	22,000	88·35	65·44	90·33	43·14	...	...
Central Provinces	253,139	12,108	98·70	42·33	97·85	49·53	...	...
Burma	337,763	104,390	95·73	61·64	97·38	42·41	...	...
Coorg	1,059	701	100·00	...	97·23	71·83	...	...
Ajmer-Merwara	5,990		97·44		92·80		...	

* Excluding those inspected by Assistant Directors of Public Health.

131. *Supply of vaccine.*—In *Madras* the percentage of success obtained with glycerine lymph in local fund areas and the municipalities was 89·7 and 94·4 respectively while that obtained with lanoline lymph in the municipalities was only 71·4. Glycerine lymph is rapidly replacing the lanoline lymph.

In *Bengal* lanoline lymph was less largely used, the total number of operations performed with lanoline lymph being 8,216 and with glycerinated lymph being 2,049,508 against 95,033 and 1,911,107 respectively during the previous year. Of the total Bengal supply of lymph (1,764,339 grains) only 7,682 grains of lanolated paste were issued during the year: this indicates how thoroughly the reputation of glycerinated lymph has become established. Only lymph bacteriologically tested at the Public Health laboratory and found satisfactory was issued to the public.

Other provinces used glycerinated lymph alone. The supply of the lymph from the various vaccine institutes was reported to be satisfactory.

In *Bihar and Orissa*, owing to the difficulty in getting a sufficient supply of calves, experimental work was carried out with adult animals and the results have proved satisfactory. Further experiments were made in the addition of .05 % of iodine to lymph before storage.

Assam reports the quality of lymph as being excellent. For the first time a charge was made for it under certain circumstances.

United Provinces Patwa Dangar Depot maintained its usual high standard of work and manufactured 80,314 grammes of glycerinated lymph and 1,643 grammes of glycerine paste.

Punjab.—The Vaccine Institute at Lahore supplied 8,974 grammes of glycerinated lymph outside the Punjab; to Persia, the Persian Gulf, Arabia, Egypt, Chinese Turkistan, Kashmir and Afghanistan.

Burma.—The depot at Meiktila did some experimental work and made some changes in technique.

Bombay.—The Vaccine Institute at Belgaum maintained its usual high standard of output, maintaining the potency of seed lymph by passing lymph strains through rabbits. It supplied Aden and Zanzibar in addition.

Delhi.

132. The total number of vaccination operations performed during 1923-24 in the province was 19,988 against 19,010. The increase was chiefly due to the work done in the rural circles.

The percentage of successful cases was 97.78 for primary and 70.05 for revaccinations. The Assistant to the Civil Surgeon examined 26 cases in 12 villages and found the work to be satisfactory.

Out of 16,579 children estimated to be of suitable age for vaccination in the province in the year 1923, 15,226 were vaccinated.

Of 9,337 children estimated to be available for vaccination in Delhi city, 5,902 or 63.2 per cent. were vaccinated successfully.

Bengal.

133. During the year under review the total number of operations performed by all establishments was 2,057,724 (primary 1,590,576, revaccinations 467,148) against 2,006,140 (primary 1,526,385, revaccinations 479,755) during the previous year, showing an increase of 51,584 (2.5 per cent.) operations. There was a general decline in revaccinations due to (1) reduction in number of vaccinators, (2) apathy of the people towards revaccination, (3) want of power under the Vaccination Act to enforce revaccination, (4) want of help from the police, chowkidars and panchayats, (5) the absence of small-pox in an epidemic form, *e.g.*, Calcutta, and (6) malaria in some districts, *e.g.*, Pabna, Midnapur, Faridpur, Malda.

Out of 1,355,980 infants available for vaccination, 278,286 infants were successfully vaccinated. This may be due to the general aversion displayed to very young children being vaccinated.

9,982 primary and 4,112 revaccination operations were performed in factories and tea gardens of this Presidency during the year against 5,470 and 2,264, respectively, during the preceding year. The Director of Public Health remarks: "Although there

was a marked increase in the number of operations performed in the factories and tea gardens, still it is a deplorable fact that Jalpaiguri with its numerous tea gardens reported only 645 cases during the year."

The Port of Calcutta and Railway limits show 24,108 primary and 11,274 revaccinations against 5,469 and 12,997 in 1922-23.

Special Inspectors of Vaccination were deputed to investigate the registration of births and ascertain the state of vaccination of infants in certain municipalities. It was observed that in those municipalities out of 1,825 children born during 1922 only 307 were vaccinated—truly a very unsatisfactory state of affairs.

The District Health Officers including the Civil Surgeons of Darjeeling and Chittagong Hill Tracts inspected 66,273 primary and 6,814 revaccination cases or 4.4 and 1.8 per cent. of the total persons vaccinated during 1923-24. The provincial vaccination inspecting staff inspected 8,093 cases or 39.3 per cent. of total operations.

Six point vaccinations were reduced owing to apathy and indifference. Cost per head (3 annas 9 pies) remained the same.

Though the ratio of death from small-pox per mille of population was the lowest on record during the last ten years, the necessity for measures to restrict its dissemination was strongly urged, and strong warning was issued to all local bodies and District Boards to rise to the occasion and provide the necessary funds.

Bihar and Orissa.

134. The total number of operations performed during the year again showed an increase, being 1,043,264 as compared with 1,002,889 last year. The difficulties and opposition experienced in 1920 and 1921 are said to be gradually diminishing.

The ratios of success in municipalities were 97.25 per cent. for primary operations and 49.94 per cent. for revaccinations as compared with 96.77 per cent. and 63.41 per cent., respectively, last year.

The number of children under one year available for vaccination was 1,034,163 and the number of successful operations was 375,127, *i.e.*, 362 per thousand against 331 per thousand successful operations during 1922-23.

The ratio of protection afforded to infants in municipalities was 50.4 per thousand of the surviving infant population as compared with 45.2 in 1922-23. These figures are unsatisfactory inasmuch as they show that far more than half of the total number of operations is performed on children over one year of age. Civil Surgeons and Assistant Directors of Public Health are unanimous in attributing most of the opposition to vaccination to the age of the child rather than to the operation itself. In view of the strong popular prejudice against the vaccination of young infants, the Director of Public Health "considers it desirable that the Vaccination Act should be amended so as to raise the age for compulsory vaccination to one year instead of six months." He further predicts increased small-pox prevalence during the next two or three years, after the present low incidence. He expresses dissatisfaction with the present position, and hopes that the Act as modified in his suggestion be made compulsory and enforced, vaccination being free.

The Vaccine Depot at Namkum supplied the province with vaccine throughout the year; and a very large stock is now kept in reserve, which will want careful watching. Its cost was low.

Assam.

135. In the plain districts vaccination was carried out by the staff of vaccinators paid by local bodies and in hill districts by the staff paid by Government. The number

of vaccinators employed was 425 against 433 during 1922-23. Twelve vaccinators were retrenched by two Local Boards. It will be remembered that two Local Boards retrenched 27 vaccinators in 1922-23. This retrograde policy is to be deprecated as it does not permit of every village being visited at least once a year as is desired by the Director of Public Health.

The total number of operations performed was 385,579 (313,594 primary and 71,985 revaccinations) as compared with 376,447 (300,895 primary and 75,552 revaccinations).

45.72 per cent. of infants under one year of age available for vaccination in urban compulsory areas were successfully vaccinated (41.13% in 1922-23). The percentage is very variable, some municipalities being highly protected, others having no protection. In one (Sunanganj), of 119 children available, none were vaccinated. The percentage of success in primary vaccinations was 95.58 and that for revaccinations was 69.32.

United Provinces.

136. 1,267,442 persons (1,208,779 primary and 58,663 revaccinations) were vaccinated during the year. The number and percentage of successful vaccinations in which the results were known amounted to 1,127,602 and 91.53 in the case of primary vaccinations and to 33,220 and 63.70 in the case of revaccinations. Each vaccinator vaccinated on an average 1,400 persons during the year as against 1,346 in the previous year. The district staff vaccinated 25.57 persons per mille of the population. Almora and Garhwal, the two hill districts, again head the list for efficient vaccination, as they have done for long.

The decrease in the number of successful primary operations in certain districts is attributed to reduction in chowkidars, the effects of the disturbance of 1921, climatic conditions, slackness of some vaccinators, cholera and plague, and deputation of certain vaccinators to the Adh Kumbh Mela at Allahabad.

The Vaccination Act is in force in all cantonments and municipalities and in 46 out of 48 notified areas. The remaining two will shortly be included. A proposal to extend the Act to rural areas has been shelved by Government for the present. In municipalities the ratio of successfully vaccinated per mille of the population was 31.73; in notified areas it was 31.62.

There has been a decrease of 30,463 in the inspection work done by the Assistant Directors of Public Health and District Superintendents of Vaccination for which decrease the Director of Public Health gives adequate reasons.

The supply of lymph from the Provincial Bovine Lymph Depot, Patwa Dangar, was satisfactory during the year.

Punjab.

137. The total number of vaccinations and revaccinations performed by all establishments during the year rose to 943,263 (+40,832). In the absence of an epidemic of small-pox and in the presence of much plague and malaria this increase is highly satisfactory, and it is attributed mainly to the increased attention given to vaccination as the result of the re-organisation of the Public Health Department and the direct control, by Medical Officers of Health, of municipalities and districts and by the Assistant Epidemiologists.

The percentage of success for primary vaccinations was 97.78 (96.67 in the previous year), for revaccinations 70.62 (69.40 in 1922-23). The uniformly high rate of success of primary vaccinations which has long been a feature of the vaccination in this province

is no doubt to some extent due to the fact that the lymph manufacture is carried out under very favourable climatic conditions.

Of the total numbers under one year of age born in municipal towns in which the Vaccination Act is in force, 82 per cent. are reported to have been successfully vaccinated. The Act is in force in 84 municipalities out of 103, and in 21 notified areas out of 106. Some cities such as Amritsar and Ferozepore are adversely commented on, and rightly so, in regard to existing vaccination facilities.

The old practice of inoculation still exists in some parts of the province and fatal results from it were reported.

It is a proved fact that districts showing a low vaccination index during the past five years are also the districts exhibiting a higher small-pox death rate during 1923-24.

The Vaccine Institute distributed 41,063 grammes of vaccine in and outside India during the year.

North-West Frontier Province.

138. The total number of vaccinations performed (108,837 primary and 19,363 secondary operations) represented a decrease of 5,130 and 10,825 respectively, as compared with the figures of 1922-23. The decrease in the former is attributed to (1) the reduction of three vaccinators, (2) very poor work performed by one vaccinator, and (3) the inexperience of new vaccinators. 108,744 successful primary vaccinations were performed. Of these 62,083 were on infants under one year and 34,339 on children between 1 and 6 years of age. The successful vaccinations were at the rate of 36.51 per mille of the population. The value of vaccination is not fully appreciated by the majority of the population until small-pox appears. Only 19,363 revaccinations were performed.

The percentage of success recorded by Civil Surgeons was 63.13 for primary and 63.63 for revaccination. Superintendents recorded a success of 93.59 for primary and 84.99 for revaccinations. The latter figure is open to question though it may be that the unprotected ratio amongst adults is much higher in the North-West Frontier Province in view of the conditions of life and the type of population.

The number of children under one year of age successfully vaccinated in municipalities and notified areas was 5,427.

Glycerinated chloroform lymph which was procured from the Punjab Vaccine Institute was satisfactory.

Vaccination is gradually gaining in popularity in the rural areas and there is little objection to primary vaccination. The Director of Public Health, who enters a strong protest against the reduction of vaccinators in Peshawar city, and is strongly supported in this by the Chief Commissioner, points out the duty of Municipal Commissioners and District Boards in this respect. He considers that the Vaccination Act should be extended not only to Peshawar city, but to all districts of the province, and adds: "We have only to note the wonderful attendance of mothers with their children amongst the uneducated trans-frontier tribes to realise what benefit they consider is produced by vaccination."

Central Provinces.

139. The total number of vaccinations in the province was 501,398 against 429,291—an increase of 72,107 over the previous year. The Director of Public Health thinks that this increase is due to the high birth rate of the year and does not indicate better work as a large number of unprotected children are to be found both in municipal towns

and in villages, and individual vaccinators' averages, except in a few instances, are still far below the standard. Plague no doubt retarded work in some areas. Certain districts are keen for compulsory vaccination and proposals for this in rural areas are under the consideration of Government.

The Civil Surgeons inspected 7.28 per cent. of the primary and 7.21 of the revaccinations. The Assistant Superintendents and others inspected 49.43 per cent. of the primary and 21.09 of revaccinations. The percentage of success recorded by vaccinators was 98.85 for primary and 58.96 for revaccinations. The Civil Surgeons and Assistant Superintendents during their inspections found 98.70 and 97.85 successes for primary and 42.33 and 49.53 for revaccinations.

In municipal towns about 76 per cent. of the infants available for vaccination were vaccinated—a low figure as compared with previous years. The Director of Public Health considers that it is urgently necessary that municipal authorities should set this matter right otherwise the results will be disastrous. Reported figures of small-pox mortality are regarded as being largely underestimated and a wide epidemic is expected after five years of comparative quiet.

The supply from the Vaccine Institute was reported to be satisfactory.

Madras.

140. Vaccinations done during the year amounted to 1,912,565 (1,565,706 primary and 346,859 revaccinations)—a satisfactory increase over 1922-23. This is attributed to the following:—

- (a) Better organisation and better supervision over the work of vaccinators since the introduction of the new District Health Scheme.
- (b) The increase in the minimum prescribed for the vaccinators.
- (c) A large number of births and out-births which were detected by door to door enquiries during the off season.
- (d) The growing popularity of vaccination and revaccination in rural areas largely on account of propaganda work.
- (e) Widespread prevalence of small-pox in certain districts. This has been a powerful contributing factor and is due largely to neglect of vaccination and indifference in early reporting, even by officials.

The percentage of successes under primary vaccination and revaccination increased during the year—primary vaccinations by 10.8 per cent. and revaccinations by 3.1 per cent.

The supply of glycerine lymph, the suspension of routine vaccination work during the hot weather months except in the Nilgiri Hills, and the better interest taken by the vaccinating staff as a result of the introduction of the District Health Scheme combined to produce work of better quality.

Compared with the previous year there was an increase of 113,632 in the number of children under one year of age successfully vaccinated. This was due to better registration of births, detection of a large number of out-births and other unprotected children by the health staff, and by the good effect of propaganda work.

The percentage of success obtained with glycerine lymph in local fund areas and the municipalities was 89.7 and 94.4 respectively, whilst that obtained with lanoline lymph in the municipalities was 71.4. It is satisfactory to note that with the extended supply of glycerine lymph the percentage of success continues to rise.

Small-pox incidence was extraordinarily high though less than in 1922-23. It indicates the need for undivided attention on the part of local bodies to the Public Health recommendations. There is beginning to be a demand for compulsory vaccination in certain areas, but, as the Director of Public Health says, "Until more of the Taluk Boards realise the necessity for enforcing the compulsory rules not much benefit will result from compulsory vaccination."

Bombay.

141. Several District Boards chose to effect economies by reduction of vaccination staff—at all times a very doubtful expedient—and large areas were left without vaccinators for considerable periods.

Out of 631,023 primary vaccinations, 88.52 per cent. were successful, .25 per cent. unsuccessful and the results unable to be ascertained in 11.23 per cent. Compared with the previous year, 1923-24 showed an increase in births that would be expected to result in an increase in primary vaccinations.

Of the primary vaccinations 75 per cent. were of infants under one year of age.

The success rate of primary vaccination as ascertained by the Assistant Directors of Public Health was 98.87 and by Inspectors 98.80.

112,271 persons were revaccinated. The percentage of successful revaccinations was 47.81; the results in 51.23 per cent. could not be ascertained.

The high percentage of unknown cases in both primary and revaccinations is due to the migratory nature of the population in Sind and Aden.

Opposition is reported in many of the towns where the Act is in force for compulsory vaccination and where compulsion is either absent, lax or spasmodic.

The percentage of inspected children found unprotected was 5.63 which shows an improvement over the figures of the last year.

Organised active anti-vaccination propoganda, though this is very limited, still continued in parts of Sind.

The Vaccine Institute issued 1,184,957 doses of lymph during the year. All vaccinations were performed with glycerinated lymph.

The death of Dr. Fisher, the Director, was a grievous loss to the Institute and to vaccination in general.

The temporary vaccination establishment at Karachi for the vaccination of pilgrims proceeding to Hedjaz vaccinated 7,455 pilgrims against 4,390 in 1922-23 at a cost of Rs. 668—a cheap enough insurance surely. Aden enjoyed the immunity bought by efficient protection.

Burma.

142. The total number of operations reported during the year was 758,785 (548,875 primary and 209,910 revaccinations), an increase of 56,326 over 1922-23. Much of this increase was due to the presence of small-pox.

In 61 towns under the provisions of the Vaccination Act, 95,905 operations are reported to have been performed. Of these, 42,394 were primary and 53,511 revaccinations. The percentage successes of primary and revaccinations are 98.92 and 53.23.

The number of children under one year of age available for vaccination was 22,690. Successful operations are reported to have been performed on 25,103 infants. The Director of Public Health considers that this excess is probably to be accounted for by

interchange between urban and rural populations and by the large number of births unregistered. It is apparent that the Vaccination Acts are not enforced with any thoroughness in certain towns otherwise the number of unprotected infants under 12 months would not be so large.

Rural compulsory vaccination is in its infancy, but evidently vaccination is popular and people are easily persuaded when local officials give their help in propaganda.

The Civil Surgeons verified 9.41 per cent. of the primary vaccinations and the Inspectors and other inspecting officers 52.22.

27,155 passengers arriving at the Port of Rangoon were vaccinated. This is as it should be when we consider that Rangoon is one of the largest immigrant ports in the East.

Andamans.

143. 105 primary and 5 revaccinations were done with 83 and 3 successes respectively.

Vaccination among troops.

144. Particulars of vaccination in the Army will be found in Statement III of the Appendix to this Section.

Compulsory vaccination.

145. In restating in tabular form for each province the number of towns in which the Vaccination Act is in force, I would reiterate the remarks made in last year's report that, if we wish to attain to the complete eradication of small-pox, this end can be secured by the application of the Vaccination Act and the enforcement of its provisions.

Province.	Number of towns in which Act is in force.	Increase or Decrease.
Delhi Province	1 (Delhi city).	...
Bengal Presidency	117	+2
Bihar and Orissa	57	...
Assam	23	+1
United Provinces of Agra and Oudh	85	+1
Punjab	101	+6
North-West Frontier Province	9	...
Central Provinces and Berar	72	...
Madras Presidency	79	-1
Coorg	2	...
Bombay Presidency	12	...
Burma	61	...
Ajmer-Merwara . . . . .	...	...

SECTION VI.

Medical Institutions.

(Contributed by the Director-General, I.M.S.)

I.—STATE-PUBLIC, LOCAL FUND AND PRIVATE-AIDED CIVIL HOSPITALS AND DISPENSARIES.

146. There were 3,535 of these institutions in existence at the end of 1922 ; during 1923 the number increased by 99 giving a total of 3,634 at the end of the year.

The total number of patients treated has increased from 36,875,222 in 1922 to 38,059,386 in 1923. The increase was noticeable in Delhi, Bihar and Orissa, Punjab, Burma, Bombay, Madras and Baluchistan. The number of operations also have increased by 44,036, *viz.*, 1,194,664 in 1923 against 1,150,628 in 1922.

The following tabular statement compares the figures of 1922 with those of 1923 for all provinces :—

Province.		Number of Institutions.	Number of in-patients.	Number of out-patients.	Total number of patients.	Number of operations.
Delhi	{ 1922	14	3,785	49,477	53,262	18,226
	{ 1923	15	9,614	307,598	317,212	14,919
Bengal (excluding Calcutta)	{ 1922	593	39,164	5,211,124	5,250,288	101,371
	{ 1923	646	38,109	5,197,070	5,235,179	99,614
Calcutta	{ 1922	19	35,168	345,124	380,292	41,890
	{ 1923	21	35,269	316,138	351,407	37,697
Assam	{ 1922	188	10,837	1,655,177	1,666,014	18,254
	{ 1923	170	10,732	1,588,862	1,599,594	17,703
Bihar and Orissa	{ 1922	327	39,887	3,096,294	3,136,281	175,165
	{ 1923	380	42,202	3,544,350	3,586,552	206,814
Central Provinces	{ 1922	197	19,600	1,808,121	1,827,721	56,576
	{ 1923	197	19,616	1,788,555	1,808,171	60,806
United Provinces	{ 1922	484	33,792	5,441,506	5,525,298	240,848
	{ 1923	465	36,120	5,369,490	5,455,610	250,290
Punjab	{ 1922	406	97,308	5,051,268	5,149,076	265,580
	{ 1923	422	104,999	5,576,776	5,681,775	265,161
Burma	{ 1922	211	82,787	1,333,763	1,916,550	62,932
	{ 1923	213	82,855	1,859,920	1,942,775	65,072
Bombay	{ 1922	397	69,331	2,479,369	2,549,200	95,825
	{ 1923	398	73,042	2,487,659	2,560,701	101,731
Madras	{ 1922	623	131,510	8,098,588	8,230,098	24,350
	{ 1923	632	133,910	8,220,258	8,354,168	26,501
North-West Frontier Province	{ 1922	47	12,792	798,479	811,271	37,967
	{ 1923	46	12,210	751,510	763,720	38,303
Baluchistan	{ 1922	29	10,000	369,878	379,878	11,594
	{ 1923	29	9,142	393,380	402,522	10,548
Total	{ 1922	3,535	637,061	36,238,168	36,875,229	1,150,628
	{ 1923	3,634	657,820	37,401,566	38,059,386	1,194,664

147. *Delhi*.—Twenty-seven dispensaries were open on the last day of the year under report. Of these 9 were State-special, 12 provided by local funds, 3 were private-aided and the rest of railways.

The expenditure amounted to Rs. 2,84,591 against Rs. 2,35,230. The operations performed during the year numbered 14,919, of which 14,617 were principal and 302 secondary.

148. *Bengal. (excluding Calcutta)*.—Sixty dispensaries were opened and five closed during the year as compared with thirty-six opened and four closed during the preceding year. The number of institutions opened on the last day of the year under report was 914 against 859 in 1922.

The number of patients treated during the year was 7,082,603 as compared with 6,969,052 in 1922. 61,975 patients sought medical relief in the indoor wards of all classes of hospitals; in 1922 these numbered 61,948. The mortality rate was 6.38 per cent. as against 8.82 per cent. in the preceding year. As usual the largest number of patients treated suffered from malaria, *viz.*, 2,101,954.

The surgical operations performed amounted to 132,409 as compared with 131,211 in 1922. The selected operations numbered 5,231 as against 5,535 in 1922.

Excluding the opening balance, the total receipts of hospitals and dispensaries of classes I, III and IV amounted to Rs. 19,77,842 and their expenditure, excluding amount invested, to Rs. 18,30,417 against Rs. 17,77,990 and Rs. 17,44,891 respectively in the previous year.

149. *Calcutta*.—The year commenced with 24 and ended with 26 institutions. Two new institutions were opened during the year for treating out-patients only. 40,755 in-patients and 375,264 out-patients attended, whilst 39,867 and 399,032 attended during the preceding year or an increase of 888 in-patients and a decrease of 23,768 out-patients during the year under report. The introduction of the system of charging small fees in certain hospitals together with the comparative absence of epidemics accounts for the decrease. In hospitals where the system of charging fees was not in force there was a noticeable increase in out-door attendance.

The death rate among in-patients remained practically at the same level as in the previous year, *viz.*, 11.26 per cent. as against 11.94 per cent. in 1922. The prevalence of Kala-Ázar is becoming more and more revealed. 5 599 patients were treated against 2,940 in 1922. The results of treatment with antimony are reported to be very good and the popularity of this treatment accounts for the increase in admissions.

The surgical operations performed numbered 44,052 during 1923 against 47,548 in the previous year. Important and selected surgical operations performed in hospitals of classes I, III and IV were 7,731 as compared with 8,234 in 1922 and the death rate among in-patients operated on in hospitals of these classes was 3.55 per cent. as against 4.23 in 1922.

The total receipts of hospitals of classes I, III and IV amounted to Rs. 28,79,872 as against Rs. 29,09,432 in 1922 and the expenditure, excluding investments, to Rs. 27,78,230 as compared with Rs. 29,41,400 in 1922.

150. *Assam*.—The number of dispensaries open on the last day of the year 1923 was 227 against 246 in 1922. Twenty dispensaries were closed and one was opened during the year.

The total number of both in and out-patients treated at the State-Public, Local Fund, and Private-aided hospitals and dispensaries fell from 1,066,014 in 1922 to 1,599,594 in 1923. Goalpara district returned a remarkable decrease of 20,940, which is mainly attributable to the abolition of the travelling dispensary there, absence of epidemic diseases, and diminution in sickness in certain localities.

The in-patients treated were somewhat less than in the previous year, *viz.*, 10,732 against 10,837; the number of out-patients fell from 1,655,177 in 1922 to 1,588,862 in 1923. The principal causes of admissions to hospitals were Kala-Azar, injuries, diseases of the eye, ulcers, malaria and dysentery. The admissions and deaths from Kala-Azar were 789 and 157 against 414 and 63 in 1922.

The surgical operations both principal and secondary performed in the State-Public, Local Fund and Private-aided dispensaries amounted to 17,703 in 1923 against 18,254 in 1922. The percentages of cures and deaths were 98.08 and .34 in 1923 against 98.13 and .23 in 1922. The selected operations performed numbered 901.

The income and expenditure of the State-Public, Local Fund and Private-aided hospitals and dispensaries are summarised below.

Year.	Income.	Expenditure	Government contributions.	Local and Municipal Fund contributions.	Subscriptions and Donations.	Percentage of total outlay charged to Provincial revenues.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1922	7,46,368	6,07,896	3,58,747	1,89,616	38,857 or 5 per cent.	59 per cent.
1923	7,47,085	5,89,903	3,26,241	2,02,371	60,209 or 8 per cent.	55 per cent.

151. *Bihar and Orissa.*—The year under report commenced with 485 institutions and ended with 546. Seventy-seven new dispensaries were opened during the year (62 by district boards, 13 by railway companies and 2 by private bodies), whilst 16 were closed.

The number of patients treated amounted to 3,586,552 against 3,136,281 in 1922. This represents an increase of 450,271. The increase was noted in all classes except travelling dispensaries. In the case of the latter the fall is attributed to the closure of some of them.

The year under review was a healthy one. The death rate was 25.0 per mille against 24.1 in the preceding year. The slight increase is said to be due to the prevalence of malaria and plague in certain districts.

Deaths from malaria rose from 578,656 in 1922 to 599,840 in 1923. The number of patients treated in hospitals and dispensaries was 932,508 as compared with 865,716 in 1922. Quinine is sold at offices of civil surgeons and the sale is said to be rising since the price of the drug fell.

Kala-Azar was responsible for 20,619 cases against 17,212 in 1922. The increase is said to be due to patients coming to hospitals more freely for treatment and not to an increase in the prevalence of the disease.

Small-pox prevailed in certain districts. The deaths increased from 2,560 in 1922 to 3,161 in 1923.

There are no special hospitals for the treatment of tubercle of the lung.

Ankylostomiasis is prevalent all over the province, the northern districts appear to be more heavily infected than others. A special investigation was commenced by Dr. V. T. Korke in the Singhbhum District under the auspices of the Special Research.

There were 2,082 resident lepers in the ten leper asylums at work during the year against 2,010 in 1922. The total expenditure on the maintenance of these asylums amounted to Rs. 1,80,862.

The surgical operations performed during the year under review at the State-Public, Local Fund and Private-aided hospitals and dispensaries numbered 206,814 against 175,164 in 1922. Of these 95·85 per cent. were cured, 3·51 relieved, 44 discharged otherwise and 2 died.

The income of these institutions during 1923, excluding the opening cash balance, was Rs. 22,87,411 against Rs. 17,54,636 in 1922, whilst the expenditure, excluding amounts invested during the year, amounted to Rs. 20,69,495 against Rs. 16,98,966 in 1922.

The buildings of the Ranchi Radium Institute have been completed and equipped.

152. *Central Provinces*.—The year 1923 commenced with 305 institutions and ended with 298. Seven dispensaries were closed during the year.

The total number of in-door and out-door patients was 1,805,171 against 1,827,721 in 1922 or a decrease of 19,550. The decrease is due to the prevalence of plague in certain districts and to healthier conditions in others.

The in-patients increased slightly from 19,600 in 1922 to 19,616 in 1923. The daily average attendance fell from 746·28 in 1922 to 646·73 in 1923. The out-door patients declined from 1,808,121 in 1922 to 1,788,555 in 1923. The daily average attendance decreased from 11,151·76 in 1922 to 10,806·79 in 1923.

The surgical operations rose from 56,576 in 1922 to 60,306 in 1923. The selected operations numbered 4,266.

The total expenditure amounted to Rs. 10,49,492 against Rs. 10,64,587 in 1922.

Anti-rabic treatment was started at the Mayo Hospital, Nagpur, and the Victoria Hospital, Jubbulpore. The scheme of visiting adjoining villages on bazar days by assistant medical officers in charge of dispensaries was reintroduced during the year in four districts only.

153. *United Provinces*.—There were 632 hospitals and dispensaries open on the 31st December 1923.

The total number of patients treated at the State-Public, Local Fund and Private-aided dispensaries was 5,455,610 against 5,525,298 in 1922. The fall in attendance is not due to any lack in popularity. The greatest fall is under travelling dispensaries owing to the closure of a number of them.

The number of surgical operations performed during 1923 was 250,290 against 241,884 in 1922.

The total income of hospitals and dispensaries during 1923 was Rs. 30,97,701 against Rs. 28,11,923 in 1922 and the total expenditure was Rs. 29,14,441 as compared with Rs. 26,46,533.

During 1923, 139 patients were admitted to the King Edward Sanatorium at Bhowali.

154. *Punjab*.—The year opened with 610 hospitals and dispensaries of all classes and closed with 626; 23 were opened and 7 closed during the year 1923.

Although the ideal of having a dispensary for every hundred miles seems difficult to attain for many years to come, it is satisfactory to note that 16 additional dispensaries were opened during the year and that the number of institutions now working is the largest on record. A sum of Rs. 50,000 was allotted by Government for assisting Local Bodies and Missionary Societies to open new dispensaries. There is still great need for extension of medical relief in the Province.

The number of patients of all classes treated during the year was 5,681,775 (in-patients 104,999 and out-patients 5,576,776) as compared with 5,149,076 (in-patients 97,808 and out-patients 5,051,268) in 1922. The rise is mainly due to the prevalence of malaria; the new dispensaries also contributed to the increase. The year 1923 was not so healthy as the preceding year. The chief factor contributing towards this unhealthiness was an unusually severe outbreak of malaria, the chief characteristic of which was that it commenced earlier, increased more rapidly, was more prolonged and subsided more slowly.

The total number of operations performed during 1923 was 265,161 as compared with 265,580 in 1922. The selected operations performed numbered 42,923 against 43,544 in 1922.

The total income of hospitals and dispensaries was Rs. 34,42,050 as compared with Rs. 35,17,260 in 1922 and the expenditure amounted to Rs. 32,72,766 against Rs. 33,57,564 in 1922.

155. *Bombay Presidency*.—There were 785 institutions open on the last day of 1923, an increase of 3 over the figure for 1922.

The total number of patients treated was 2,560,701 (in-patients 73,042, out-patients 2,487,659) as compared with 2,549,200 (in-patients 69,831, out-patients 2,479,369) in 1922. The attendance of in-patients shows an increase of 3,211 or 4·6 per cent. and that of out-patients 8,290 or 0·3 per cent. over the previous year.

Arrangements for anti-rabic treatment have been sanctioned at nine additional centres.

101,731 surgical operations were performed against 96,536 in 1922, an increase of 5,195 or 5·4 per cent. The mortality rate during the year was 0·32 against 0·43 in 1922.

The total income, exclusive of the cash balance, amounted to Rs. 49,94,052 as compared with Rs. 44,64,083 in 1922. The total expenditure amounted to Rs. 50,10,883 as compared with Rs. 44,00,762 in 1922.

156. *Burma*.—The number of dispensaries remained unchanged, *i.e.*, 284.

The number of in-door and out-door patients treated at State-Public, Local Fund and Private-aided Institutions aggregated to 1,942,775 against 1,916,550 in 1922.

The in-door patients treated during the year numbered 82,855 against 82,787 in 1922. Of these, 57,481 or 69·38 were returned as cured and 4,922 as deaths. The percentage of recovery among the in-door patients was 69·38 as against 69·26 last year and the death rate was almost the same as last year. The number of out-door patients was 1,859,920. The daily average attendance of both in and out-door patients decreased by 112 from 14,049 in 1922 to 13,937 in 1923.

65,072 operations were performed during the year against 62,982 in the previous year. The death rate among the patients operated on fell from 0·93 per cent. to 0·76 per cent. during the year under report.

The total receipts and the expenditure during the year, excluding the Federated Shan States (Rs. 1,42,888 and Rs. 1,32,770 respectively) amounted to Rs. 35,62,586 and Rs. 31,30,719.

157. *Madras Presidency*.—On the last day of the year 1922, there were 758 medical institutions of all classes in the Presidency. Eighteen new dispensaries were opened and eight closed during the year under report, leaving 768 in working order on the last day of the year 1923. Medical progress in many parts of the Presidency has been much hampered by financial stringency. It is hoped that a large number of new medical institutions will be established when funds become available. The question of

opening more hospitals and dispensaries in each district in places at which their need is most felt, thus securing adequate medical aid to the people of the Presidency, is at present engaging the attention of the Government.

The in-patients treated in the hospitals and dispensaries of the Presidency numbered 133,910 in 1923 against 131,510 during the previous year. The out-door patients who sought relief amounted to 8,220,58 as compared with 8,098,583 during 1922. The increase was attributed to (1) the improved and special arrangements calculated to secure greater attention and comfort to all patients, (2) the increasing appreciation of western methods of treatment and (3) the popularity of the medical officers and subordinates.

The total number of operations performed during the year was 366,661 as compared with 337,127 during 1922. The operations returned as really "major" amounted to 26,501 against 24,350 in 1922.

The total expenditure during the year amounted to Rs. 58,91,569 against Rs. 55,46,473 in 1922.

158. *North-West Frontier Province.*—Seven new dispensaries were opened during the year and three were closed.

The attendance of civil out-patients fell from 798,479 in 1922 to 751,510 during the year under report. The in-patients also decreased, being 12,210 against 12,792 in 1922. The decrease is attributed to unusually healthy climatic conditions which prevailed throughout the year and also to the decrease in malaria.

The Chief Medical Officer draws attention to the small number of patients admitted to hospitals which is due to too many small outlying in-patient dispensaries in the province. Many of these remain empty at all times of the year and they are unnecessary at any rate as regards their accommodation for in-patients. He urges that to induce in-patients to stay in Government hospitals they must be given proper diet and proper treatment. At the present time both the factors are said to be lacking owing to (1) the scarcity of a good type of Sub-Assistant Surgeon and (2) shortage of funds makes it difficult to provide proper diet for in-patients. The Bannu Female Hospital showed the largest attendance, *viz.*, 16,784 out-patients. This indicates its popularity.

The number of in-patients treated at the Abbottabad Civil Hospital is stated to be extremely small. At Bannu the hospital is thoroughly unsuitable in all respects. A new hospital is about to be built inside the city.

38,150 principal and 158 secondary operations were performed during the year. Of these operations 37,499 were cured and 121 died. The rest were either relieved or discharged otherwise.

The income and expenditure of the hospitals each amounted to Rs. 2,89,991.

159. *Baluchistan.*—The year under report opened with 43 dispensaries and closed with 42.

The total number of cases treated in all classes of hospitals and dispensaries was 526,124 against 508,719 in the preceding year. Malaria with 135,604 cases still continues to account for the bulk of admissions both in-door and out-door.

A centre for anti-rabic treatment was started at the Que'ta Hospital.

During the year under report 12,796 operations were performed as compared with 11,594 in the previous year.

The total income of the hospitals and dispensaries was Rs. 3,69,730 against Rs. 3,52,818 and the total expenditure amounted to Rs. 3,43,637 against Rs. 3,33,510 during the last year.

II.—STATE-SPECIAL, RAILWAY AND PRIVATE NON-AIDED CIVIL HOSPITALS AND DISPENSARIES.

160. The two following tables show the number of institutions open and give details of the work done in each Province:—

State-Special and Railway Hospitals.

Province.	No. of Institutions.	No. of in-patients.	No. of out-patients.	Total No. of patients.	No. of operations.
Delhi { 1922	12	3,449	58,650	62,099	2,569
. { 1923	12	4,295	62,063	66,378	2,642
Bengal (excluding Calcutta) . { 1922	103	15,568	437,525	453,093	8,665
. { 1923	105	16,082	460,405	476,487	12,337
Calcutta { 1922	2	3,380	3,650	7,030	423
. { 1923	2	4,026	5,232	9,258	306
Assam { 1922	51	7,462	96,229	103,691	1,229
. { 1923	51	4,834	95,503	100,337	1,378
Bihar and Orissa { 1922	84	6,122	261,049	267,171	9,627
. { 1923	93	6,695	282,486	289,181	10,366
Central Provinces { 1922	62	3,353	198,795	202,148	2,869
. { 1923	56	3,470	177,142	180,612	3,358
United Provinces { 1922	125	17,194	390,239	407,433	15,276
. { 1923	112	15,194	383,306	398,500	9,749
Punjab { 1922	176	7,308	743,836	751,144	23,198
. { 1923	194	8,466	852,110	890,576	25,131
North-West Frontier Province { 1922	28	10,883	151,883	162,766	4,305
. { 1923	33	12,044	154,169	166,213	4,337
Baluchistan { 1922	11	2,534	83,311	85,845	1,445
. { 1923	10	1,975	78,068	80,043	1,340
Burma { 1922	73	13,860	195,374	209,234	4,104
. { 1923	71	13,781	207,519	221,300	5,076
Bombay { 1922	81	9,418	313,717	323,135	7,594
. { 1923	81	8,451	330,214	339,665	8,822
Madras { 1922	75	4,914	372,771	377,685	11,037
. { 1923	75	4,406	282,945	287,351	6,874
Total { 1922	883	105,445	3,307,029	3,412,474	92,341
. { 1923	895	104,719	3,401,182	3,505,901	91,716

Private Non-Aided Institutions.

Province.	No. of Institutions.	No. of in-patients.	No. of out-patients.	Total No. of patients.	No. of operations.
Bengal (excluding Calcutta) . { 1922	163	5,334	1,157,727	1,163,061	20,714
. { 1923	163	5,712	1,217,296	1,223,008	19,483
Calcutta { 1922	3	1,319	50,258	51,577	2,609
. { 1923	3	1,460	53,894	55,354	2,303
Assam { 1922	7	635	34,114	34,749	325
. { 1923	6	557	28,672	29,229	286

Province.	No. of institutions.	No. of in-patients.	No. of out-patients.	Total No. of patients.	No. of operations.	
Bihar and Orissa	1922	74	17,283	736,169	753,452	28,000
	1923	73	15,474	765,121	780,595	30,736
Central Provinces	1922	45	3,090	166,890	169,980	3,605
	1923	45	2,721	184,718	187,439	4,460
United Provinces	1922	56	5,974	409,138	415,112	11,941
	1923	55	6,587	398,430	405,017	10,110
Punjab	1922	9	477	86,730	87,207	3,969
	1923	10	867	106,485	107,352	4,729
North-West Frontier Province	1922	5	2,255	40,772	43,027	5,708
	1923	5	2,581	41,847	44,428	6,857
Baluchistan	1922	3	128	42,868	42,996	966
	1923	3	124	43,435	43,559	908
Bombay	1922	304	16,557	1,383,254	1,399,811	48,302
	1923	306	14,759	1,629,838	1,644,597	65,842
Madras	1922	59	20,295	381,835	402,180	16,681
	1923	61	20,430	354,040	374,470	14,881
Total	1922	728	73,347	4,489,755	4,563,102	142,910
	1923	730	71,272	4,823,776	4,895,048	160,590

III.—LUNATIC ASYLUMS.

161. The attached table gives the number of mental asylums in each province during 1923, the total population of such institutions in each province and the number discharged cured and died. The totals for all-India are given for the years 1922 and 1923.

Province.	No. of Asylums.	Admitted and re-admitted, during year.	TOTAL ASYLUM POPULATION.		Total.	Discharged cured.	Died.	DAILY AVERAGE.		Criminal Lunatics.	
			Males.	Females.				Strength.	Sick.		
Bengal	4	213	1,015	171	*1,186	115	81	950.44	116.97	549	
Assam	1	55	407	97	504	31	30	444.67	732.92	210	
Bihar and Orissa.	1	69	281	50	331	21	20	278.67	39.58	144	
United Provinces	3	347	1,838	292	1,630	158	114	1,301.25	214.77	289	
Punjab	1	317	951	246	1,197	123	92	899.53	51.83	193	
Central Provinces	1	67	327	81	408	29	24	342.31	19.83	116	
Bombay	6	514	1,486	447	1,933	253	98	1,481.9	56.9	256	
Madras	3	330	993	303	1,296	172	89	959.07	125.47	204	
Burma	2	224	992	163	1,155	70	80	952.37	122.63	470	
Total	1922	22	2,106	7,684	1,695	9,579	1,014	567	7,508.56	802.07	2,405
	1923	22	2,136	7,790	1,850	9,640	972	628	7,005.21	780.90	2,431

* Excluding observation cases

+ Excludes daily average of Epileptics which is 34.67.

In Bengal the number of mental Hospitals remained unchanged. There was no overcrowding in any institution during the year under review. The new buildings at Bhawanipore were completed in 1923 but owing to the precarious condition of the provincial finances they could not be brought into use during the year.

Dysentery prevailed in an epidemic form at Berhampore in February 1923. Dysentery patients were segregated.

Mania was the most common type of insanity and accounted for 100 admissions in 1923. 65 out of the total number of patients of that type (429) recovered during the year.

Every endeavour has been made to complete the buildings required in connection with the establishment of the mental hospital for Indian patients at Ranchi and it is hoped that within eighteen months the new hospital will be in a position to receive patients.

The Patna Asylum treated 331 lunatics. Of these 21 were cured. The number of criminal lunatics was 141.

In the three asylums in the United Provinces, out of a total population of 1,630,158 were discharged cured.

The total population of the Punjab Lunatic Asylum, Lahore, was 1,197 during the year. It is gratifying to note that the new Criminal Asylum which has cost over three lacs will be ready for occupation in a few months. The question of accommodation which owing to the progressive increase of the population of the Asylum had become very acute will now be settled satisfactorily. The extension of the tubercular section completed in 1921 has supplied a long felt want.

The cases of dysentery and diarrhoea comprise a large proportion of the admissions to hospital. During 1923, 72 patients have been treated in the tubercular section.

The population of the Mental Hospitals in the Bombay Presidency was 1,933.

The health of the inmates at the Nanpada Mental Hospital was very indifferent during the year owing to the prevalence of influenza and bowel complaints which were responsible for 76 and 99 admissions, respectively.

The chief causes of deaths at the several mental hospitals during the triennium (1921-23) were tuberculosis 44, pneumonia 25, valvular diseases of the heart 23, anæmia 22, dysentery 23, diarrhoea and digestive system 17 each.

The principal types of insanity treated during 1921-23 were mania 2,336, melancholia 988, dementia 635, delusional insanity 376, insanity caused by cannabis indica or its preparations or derivatives 364, idiocy 163 and mental stupor 131.

In the Mental Hospital, Nagpur, among new admissions in 1923 the hookworm infection was 6·20. With a constant supply of fresh cases from amongst new admissions and on account of the fouling of barrack floors with faecal matter, continuous examination and repetition of treatment are necessary and this work goes on continuously. As a routine measure two treatments by means of Manson's mixture were carried out at half yearly intervals.

There is already site crowding in the Provincial Mental Hospital of Assam at Tezpur and the population has increased steadily and is still showing a tendency to go up. More accommodation is urgently required both for males and females. Government have approved the proposals for the erection of the female enclosure and revision of the scheme for rebuilding of the Mental Hospital. Plans and estimates are under preparation. The lack of accommodation makes itself felt in Jails; in most of them there are non-criminal lunatics awaiting admission to the Mental Hospital.

The daily average strength rose from 443·82 to 414·67 in 1923.

In the Mental Hospital, Madras, accommodation for Indian civil male patients is not sufficient and the over-flow had to be accommodated in the European blocks. There is over-crowding now and admissions from out-stations have at times to be refused. A similar state of affairs exists in the female enclosures.

The sanitation of all the three mental hospitals in the Madras Presidency was satisfactory. The dry earth system of conservancy is still in use.

The Superintendent of Madras Mental Hospital reports that the village adjacent to the hospital is getting more congested and that it has of late become a source of danger to the health of the inmates of the Institution. Apart from this the noise associated with the celebration of various festivals carried out in the late hours of the night disturbs sleep so essential for the patients of the Institution. Necessary steps should be taken to have this nuisance removed.

In spite of the all round improvements made in recent years at the Mental Hospitals in the Madras Presidency, there remains yet much to be done in the direction of treatment and segregation of patients and the construction of up-to-date buildings before the institutions can be compared with similar ones in the United Kingdom. Further progress has greatly been retarded on account of lack of funds.

The total population of the three hospitals was 966 during 1923. 172 were discharged cured.

The population of the two asylums in Burma was 1,155 in 1923. The number of criminal lunatics was 470.

IV.—MEDICAL COLLEGES.

Bombay.

162. *Grant Medical College.*—At the beginning of the year the number of students on the rolls was 1,142. Of these 150 left the college on completion of their four years' course of study and 206 junior students left owing to their failure in the university pre-final examination; 57 new students were admitted and 103 ex-students were re-admitted into the college during the year. The total number at present on the rolls is 946.

The following statement shows the number of candidates who presented themselves for the various examinations, and the number who passed :—

Examination.	Number of candidates.	PASSED.	
		Males.	Females.
M. B. B. S.—			
Preliminary Scientific	125	71	6
Intermediate	575	229	14
Final			
{ Part I	378	119	3
{ Part II	410	158	6
M. D.—			
Branch I.—Medicine	2	...	1
Branch II.—Midwifery	2	...	...
Bachelor of Hygiene—			
M. and S.	2	...	1

Military Medical Pupils.

No military pupils were under training in the college.

Madras.

163. *Madras Medical College.*—There were 616 students on the rolls of the college distributed as follows :—

Class.	Males.	Females.	Total.
M. B. and B. S.	298	20	324
L. M. and S.	104	12	116
Apothecary	32	21	53
Chemist and druggist Class	2	...	2
Sanitary Inspector Class	58	...	58
Sanitary Inspectors deputed for quinquennial training	23	...	23
B. S. S. C. class (including 1 for junior Health Officers Grade)	10	...	10
Post Graduate Class.—Civil Assistant Surgeons	14	...	14
Post Graduate Class.—Civil Sub-Assistant Surgeons	16	...	16
Total	557	59	616

Nine military pupils were admitted during the year.

The following table details the number of students who sat for the University Examination and the number who passed :—

Examination.	Number examined.	Number passed.
L. M. S.—		
1st Examination (new)	1	1
2nd Examination (new)	34	12
3rd Examination (new)	43	35
Final Examination (new)	44	26
M. B. & B. S.—		
1st Examination	133	73
2nd Examination	105	28
3rd Examination	80	45
Final M. B. & B. S.	88	35
Total	528	255

Of the seven fourth year military pupils under the old curriculum, six passed the final examination before the Board of Examiners in October 1923 and one in March 1924.

One military pupil passed the First M. B. examination of the University of Madras, four the First L. M. S., one the Second L. M. & S., one the Third M. B. and three the first part of the Final L. M. & S. examination.

Punjab.

164. *Lahore Medical College.*—The total number of students on the rolls of the college was 509.

Government scholarship holders	Punjab	28
	North-West Frontier Province	3
	Non-Government scholarships	37
	Other students	8
	Total	74

The following statement gives the number of students who appeared for the University examinations and the number who passed:—

Examination.	Number of candidates.	Passed.
1st M. B. B. S.	145	116
1st M. B. B. S. (Supplementary)	5	5
2nd M. B. B. S.	75	66
2nd M. B. B. S. (Supplementary)	9	9
Final M. B. B. S.	70	54
Final M. B. B. S. (Supplementary)	1	1
M. S. Examination	1	1
M. D. Examination	1	1

Bengal.

165. *Calcutta Medical College.*—During the year there were 1,163 male, 17 female and 20 military students on the rolls of the College, or a total of 1,200 students.

The following statement shows the number of students who appeared for the University examinations and the number who passed :—

	1923-24.			
	MALE.		FEMALE.	
	Number appeared.	Number passed.	Number appeared.	Number passed.
Preliminary Membership, State Medical Faculty	3	3	...	...
Intermediate Membership, State Medical Faculty	22	7	...	...
Final Membership, State Medical Faculty	24	12	...	...
Preliminary Scientific M. B.	225	140	3	3
First M. B.	316	141	4	...
Second M. B.	298	144	2	1
Total	888	447	9	4
Military Pupil class	5	4	...	...

Carmichael Medical College, Belgachia.—There were 715 students on the rolls of the College. Applications for admission numbered 1,050 against 1,083 in the previous year. 96 of the former were admitted.

The following statement shows the number of students who appeared for the examinations and the number who passed :—

	Number appeared.	Number passed.
Preliminary Scientific	193	102
First M. B.	164	78
Final M. B.	149	72
Intermediate, Membership State Medical Faculty	8	4

United Provinces.

166. *King George's Medical College, Lucknow.*—During the year there were 249 students on the rolls of the college.

The following statement shows the number of students who appeared for the University examinations and the number who passed :—

	Number appeared.	Number passed.
Final M. B. B. S.	44	30
Final M. B. B. S. (Group A)	28	11
Final M. B. B. S. (Group B)	35	23
M. S.	1	...
M. D.	1	...
Supplementary Final M. B. B. S. (Group A)	5	5
Supplementary Final M. B. B. S. (Group B)	11	7
Supplementary Final M. B. B. S.	7	6

Delhi.

167. *Lady Hardinge Medical College.*—There were 101 students in residence at the beginning of the session.

Nine students appeared at Lahore for their final professional examination in November 1923, of whom 8 succeeded in taking their M.B.B.S. degree. One of these won a Queen Empress medal.

For the second professional examination, six candidates entered and all passed. For the first professional examination 18 entered and 16 passed. For the Intermediate Science examination 18 entered and 14 passed.

V.—MEDICAL SCHOOLS.

There are 21 medical schools distributed as follows :—

Bengal 4, Madras 7, Bombay 3, United Provinces 1, Punjab 2, Burma 1, Bihar and Orissa 2, Assam 1.

Bengal.

168. *Campbell Medical School.*—During the year there was a total of 704 students on the school rolls, of whom 675 were males and 29 females.

The following table gives the number of students who appeared for examinations :—

	NUMBER APPEARED.		NUMBER PASSED.	
	Males.	Females.	Males.	Females.
Compoundership examination ¹	250	...	195	...
Licentiate Examination of the State Medical Faculty—				
Final Examination	136	7	91	6
Intermediate	191	8	128	5
Primary	130	5	94	5

Dacca Medical School.—There were 542 male and 18 female students on the rolls of the school—making a total of 560.

The following table shows the results of the school examinations :—

	NUMBER APPEARED.		NUMBER PASSED.	
	Males	Females.	Males.	Females.
Compoundership Examination	119	1	106	1
Licentiate Examination of the State Medical Faculty—				
Final Examination	140	2	96	2
Intermediate	152	8	105	2
Primary	107	5	91	5

Ronaldshay Medical School, Burdwan.—There were 155 students on the rolls of the school during the year.

The following table shows the results of the school examinations :—

	Number appeared.	Number passed.
Licentiate Examination of the State Medical Faculty—		
Intermediate Examination	62	43
Primary	43	42

No students have yet appeared in the final examination as the school has been open only for the last three years.

Calcutta School of Tropical Medicine and Hygiene.—There were 66 students (including 2 females) during the year as noted below :—

	Males.	Females.
D. T. M.	39	2
D. P. H.	12	...
Short Certificate course	13	...

Out of 41 students in the D. T. M. class 35 appeared at the examination, 28 being successful and only one of these, an I. M. D. officer, passed with distinction.

Twelve students were admitted to the D. P. H. class of which one left the school before the close of the session. 11 students appeared at the D. P. H. examination, 10 being successful.

13 students were admitted to the short certificate course, of which one left the School before the close of the session. 10 students appeared at the examination, 7 being successful.

Madras.

169. *Medical School, Royapuram.*—There are 513 pupils on the rolls, 107 students appeared for the 1st year examination and 60 passed. 146 students appeared for the 2nd year examination and 84 passed. 147 students appeared for the 3rd year examination and 94 passed, and out of 237 final year students 104 were successful.

Prince of Wales Medical School, Tanjore.—There were 292 pupils on the rolls.

Of 90 final year, 46 third year, 98 second year and 77 first year pupils who appeared for the Board examination 50, 32, 42 and 51 of each respective class passed the examinations.

Medical School, Vizagapatam.—There were 282 pupils on the rolls of the school. Of 87 final year, 52 third year, 70 second year and 67 first year pupils who appeared for the Board examinations, 40, 46, 39 and 40 of each respective class passed the examinations.

Medical School, Calicut.—There were 81 students on the rolls of the school.

The school has now been transferred to Coimbatore.

47 students appeared for the 1st year examination and 33 passed.

33 students appeared for the 2nd year examination and 12 passed.

Medical School, Madura.—During the year there were 74 pupils on the rolls of the school.

60 pupils appeared for the final examination and 33 passed.

31 pupils appeared for the 3rd examination and 25 passed.

Missionary Medical School for Women, Vellore.—There were 70 students on the rolls of the school.

Of 21 third year, 25 second year and 14 first year pupils, who appeared for the examinations 20, 15 and 13 of each respective class passed the examinations.

Lady Willingdon Medical School for Women, Madras.—The school was opened in January 1923. The number of students on the roll was 20.

20 students appeared for the first year examination of whom 11 passed.

Bombay.

170. *Byramjee Jeejeebhoy Medical School, Poona.*—There were 273 students on the school rolls during the year. 145 students appeared at the final L.C.P.S. examination in May and November 1923, of whom 48 passed.

Byramjee Jeejeebhoy Medical School, Ahmedabad.—There were 176 students on the rolls of the school.

Medical School, Hyderabad (Sind).—There were 42 students on the rolls of the school. 60 students appeared at the final L.C.P.S. examination of whom 11 passed.

United Provinces.

171. *Medical School, Agra.*—There were 447 male students and 78 female students on the school rolls during the year. Of the male students 192 belonged to the military class.

101 male students and 12 female students passed the final examination.

81 male and 10 female students passed the junior qualifying examination.

The hostel accommodation continued to prove insufficient. 160 students were accommodated in two temporary hostels in the city.

Punjab.

172. *Medical School, Amritsar.*—The number of students on the rolls was 355; of these 124* belonged to the Indian Military pupil class. 125 students appeared for the final L.S.M.F. Diploma and 110 passed.

Ludhiana Medical School and College for Women.—There were 157 students on the rolls of the school.

Two students appeared for the Membership Examination of the State Medical Faculty and both passed.

15 appeared for the Final Licentiate Examination of whom 12 passed.

Burma.

173. *Government Medical School, Rangoon.*—There were 207 students on the rolls of the school. 25 students appeared for the final diploma examination and 22 passed, of these one was female.

53 students appeared for the junior (2nd year) examination for diploma and 44 passed, of these 3 were females.

Bihar and Orissa.

174. *Temple Medical School, Patna.*—There were 304 students on the rolls during the year. 43 candidates appeared at the final examination for the M.P.L. diploma and 29 passed. In the examination for the compounder class 54 students appeared for the examination, of these 40 passed.

Orissa Medical School, Cuttack.—There were 187 male and 2 female students on the rolls during the year.

51 students appeared for the final examination for the M.P.L. diploma of these 22 passed. 33 students appeared for the primary examination, of whom 25 passed.

In addition 4 candidates appeared for the examination in physics and chemistry, of whom 3 passed.

24 students appeared for the compoundership examination, of whom 22 passed.

Assam.

175. *Berry-White Medical School, Dibrugarh.*—There were 227 students on the rolls during the year. 38 out of 45 students passed the final qualifying examination, and 31 out of 37, the primary examination.

94 students appeared at the compoundership examination and 85 students passed.

* Including 2 Sub-Assistant Surgeons (I. M. D. students.)

The X-Ray Institute at Dehra Dun.

176. Two classes of instruction were held during the year. The total number of students attending was 46.

The students consisted of Medical Officers both R.A.M.C., and I.M.S., as well as of Assistant and Sub-Assistant Surgeons in Civil and Military employment. In addition, there were 4 students deputed from Indian States. 6 candidates passed with proficiency, 32 obtained pass marks and the remainder, namely, 8 failed to pass the course.

The number of Radiographic Examinations carried out at the Institute during the year was 1,192.

The number of sittings given for treatment was 7,854.

A number of patients from the Indian Station Hospital, Dehra Dun, have been attending for radiographic examination and orthopædic treatment. These cases were transferred to the Indian Station Hospital, Dehra Dun, from all parts of India.

During the year a considerable quantity of X-Ray material, mostly returned from demobilized war units and obsolete in pattern, has been disposed of.

The question of adequate protection against X-Ray injury when modern high power instruments are in use, has received careful consideration.

No case of X-Ray injury either to patients, staff or students of the Institute has been recorded.

The Branch Installations at Delhi and Simla, have continued to work in a very satisfactory manner.

The Countess of Dufferin Fund.

177. There were 38 medical officers on the cadre of the Women's Medical Service in January 1923.

The event of greatest importance from an administrative point of view has been co-ordination of the Governing Bodies of the various Funds for the physical welfare of Indian women which are under the Presidency of Her Excellency Lady Reading. These consist of the Countess of Dufferin's Fund (in which is included the management of the Women's Medical Service), the Victoria Memorial Scholarships Fund, the Lady Chelmsford All-India League for Maternity and Child Welfare, and the Lady Reading Women of India Fund. Under the new arrangements the constitution and objects of the different Funds remain unaltered. The Rules and Regulations have been altered so as to be identical for all the Funds. The personnel of the Councils and of the Executive Committees is the same for the different funds, while the incomes of each are kept strictly apart and are devoted to the objects originally intended.

Post-graduate courses for medical women on recent methods of diagnosis and treatment of venereal disease were held in Poona during March 1923. 17 medical women attended.

A prize competition for Indian school girls for essays on 'The care of the Baby' was again held and 13 prizes were awarded.

The standard of work done has on the whole been good, although some of the medical officers have been hampered by want of funds and poorness of staff. The training of midwives is a great feature in all the hospitals and the amount of gynaecological surgery done continues to increase.

SECTION VII.

Sanitary Works.

178. Table showing increase or decrease of income as compared with the previous year, and expenditure on sanitation charges, including conservancy, water-supplies and drainage, in the municipalities of different provinces.

Note.—The sanitation charges are not strictly uniform in all provinces and are therefore not provincially comparable.

Provinces.	Income.	Percentage expenditure on sanitation (1922-23) (1921-22)	Conser-vancy.	Water-Supply.	Drainage.
Assam	+	38·88 41·0	+	+	—
Bihar and Orissa	—	31·5 29·6	+	+	—
United Provinces	+	48·6 50·0	+	+	—
Punjab	—	54·8 37·5	+	+	—
North-West Frontier Province	+	25·0 21·4	—	+	—
Central Provinces	+	38·0 46·0	+	—	—
Madras	+	49·0 45·7	+	+	+*
Bombay	+	33·31 32·62	+	—	—
Burma	+	30·12 31·4	—	—	—
Bengal	+	56·4 58·5	+	+	—

* Relates to 1922-23 and 1923-24.

The following paragraphs contain information regarding sanitary works carried out or in progress in the several provinces :—

DELHI.

179. During the year 1923 under the head "Sanitation", Rs. 15,485 were received the municipality of Delhi. The expenditure was Rs. 3,10,741.

Rs. 722 were spent by the District Board and Rs. 61,228 by the Notified Area Committee ; the latter realized Rs. 5,978 as income.

The expenditure incurred by the Municipality on water-supply, drainage, and conservancy amounted to Rs. 2,32,156, Rs. 14,913 and Rs. 76,463, respectively.

The District Board Committee spent Rs. 722 for the sinking and boring of wells. The Notified Area Committee spent as follows :—

	Rs.
Water-supply	95,347
Drainage	43,852
Conservancy	61,288

A sum of Rs. 7,906 was given by the Chief Commissioner as a grant-in-aid to the Delhi Municipality.

No new important scheme was completed or proposed during the year under report.

The Raisina water works scheme is still in progress and is in the hands of the Public Works Department.

BENGAL.

180. Excluding Calcutta, there are 117 Municipalities in Bengal with an aggregate population of 2,182,655. In them, 16 health officers and 94 sanitary inspectors were employed during the year.

The income of these municipalities in 1922-23, excluding the opening balance (Rs. 21,82,986) and extraordinary and bad debts (Rs. 9,53,491), amounted to Rs. 81,47,348 as compared with Rs. 77,17,088 in the previous year. The income showed an increase of Rs. 4,30,260 or about 6 per cent.

40.7 per cent. was spent on sanitary works during the year as against 57.7 in 1921-22. Compared with the last year there was a decrease of 2.8 per cent. under the head drainage while conservancy and water-supply among others showed small increases.

The expenditure on sanitary works by government, municipalities and the district boards during the year 1922-23 amounted in aggregate to Rs. 19,93,717 against Rs. 22,59,843 during the previous year. The most important items of this expenditure were—Krishnagar water works Rs. 4,11,848, Dacca Sewerage Scheme Rs. 3,00,000, Lining of the Senchal lake Rs. 15,929, improvement of Dacca water works Rs. 15,000, extension of filtered water-supply in the Cossipur-Chitpur municipality Rs. 14,848, repairs to Hooghly-Chinsura water works machinery Rs. 14,000. Dacca sewage system and sewage purification plant are reported to be making good progress.

ASSAM.

181. The number of municipalities (16) and unions (9) in the province remained unchanged. Their aggregate income including the opening balances amounted to Rs. 10,45,544 as compared with Rs. 9,37,869 in the preceding year. Of this 38.88 per cent. or Rs. 4,06,595 was spent on sanitation including Rs. 2,35,076 on conservancy, Rs. 1,24,080 on water-supply and Rs. 19,494 on drainage against Rs. 2,26,649, Rs. 1,03,816 and Rs. 21,180, respectively, during the previous year.

A total expenditure of Rs. 36,657 was incurred by the Public Works Department on the improvement of water-supplies and on minor sanitary works in the Hill Districts (Rs. 38,164 in 1922).

Local boards incurred a total expenditure of Rs. 1,07,243 on the improvement of rural water-supply as compared with Rs. 1,60,640 in 1922. The management of the Shillong piped water-supply was taken over by the municipality from the Public Works Department. The water works at Silchar, Sylhet, Dhubri, Gauhati, Jorhat and Tezpur were maintained in order, though serious breakdowns in the latter necessitating temporary closure are ascribed to "careless working."

182. *Public Health Board.*—No meeting of the Board was held during the year as there were no schemes under consideration. The Inspector-General of Civil Hospitals and the Director of Public Health are now President and Secretary, respectively, of the recently constituted Health Board, thus ensuring the desired co-ordination of the Medical and Public Health Departments.

BIHAR AND ORISSA.

183. During 1922-23 the total income of 57 municipalities, including the opening balance, amounted to Rs. 46,43,867 against Rs. 48,10,746 during the previous year. The total expenditure on public health amounted to Rs. 14,67,196 or 31.5 per cent. of the total receipts. This included Rs. 9,81,549 (an increase) spent on conservancy, Rs. 3,11,835 (an increase) on water-supply and Rs. 1,01,855 (a decrease) on drainage.

The income of the district boards amounted to Rs. 12,35,540. The expenditure incurred on sanitation was Rs. 5,32,682 including Rs. 2,08,579 on conservancy and Rs. 1,70,898 on water-supply.

The Director of Public Health says:—"The present state of municipal finances due to high cost of living and consequent increase of salaries, and of municipal conservancy equipment due to high prices for iron work, calls for serious consideration and requires some definite policy for its improvement; otherwise the health of the townspeople will suffer severely in the next few years. It is necessary to face a permanent increase in expenditure if municipal administration and conservancy are to be maintained even at the low standard previously attained to."

184. *Sanitary Board.*—During the latter part of the year under report the Sanitary Board was superseded by the Local Self-Government Board.

Constructional expenditure of the Sanitary Works Division for the year was Rs. 4,49,643, the largest work in hand being the Kanke water-supply scheme which was sanctioned in 1922 and the expenditure on which during the year was Rs. 1,24,863.

Though 3 outline schemes and 16 detailed projects were prepared and dealt with, 19 works were under construction by Government or by local bodies, and 15 other schemes were under preparation, yet financial conditions greatly retarded the taking up of new works. Some schemes had to be recast and others deferred *sine die*. Proposals for carrying out boring work on behalf of local authorities were submitted to Government for approval. The want of an efficient engineering personnel was complained of.

UNITED PROVINCES.

185. During 1922-23 the income of municipalities amounted to Rs. 1,41,77,781, including Rs. 20,35,826 received from Government, Local funds and other sources as grants and contributions. Of the expenditure on sanitation, *viz.*, Rs. 68,93,675, conservancy and latrines absorbed Rs. 23,70,640, water-supply Rs. 31,23,436 and drainage Rs. 8,89,544.

Rs. 35,09,974 were spent during the year on sanitary works executed under the Superintending Engineer, Public Health Department. These included Rs. 18,45,831 on water works (original) and special repairs, Rs. 13,87,214 on water works maintenance, and Rs. 1,82,278 on drainage works. Projects to the value of Rs. 26,04,471 were sanctioned; projects to the value of Rs. 14,52,821 were submitted, but not sanctioned; and schemes estimated at Rs. 46,35,430 were under preparation.

Water-supplies.—The problem of controlling water-supply is as serious as ever. The Superintending Engineer says that although this matter has been frequently brought to the notice of the various boards, there is little improvement to report. To economise expenditure boards are driven to devices which lead to deterioration of their systems, especially as the number of private connections is rapidly growing and yields only a fraction of the revenue required to cover the cost of water supplied.

The engineering reports are on the whole satisfactory. Briefly the plants at Agra, Meerut, Mussoorie, Jhansi, Muttra, Mirzapur were well maintained; at Allahabad there was improvement but the settling tanks require immediate attention; at Benares water works reorganisation was said to be an urgent necessity; at Cawnpore there was improvement and Puech-Chabal filters worked well, but 40 per cent. wastage is too high; at Lucknow the Paterson plant which has worked since 1st November 1923 gave good results; at Naini Tal the old steam pumps were overhauled as a stand by and the electro motor pumps, after testing, were handed over to the municipality. Many tube wells (*e.g.*, Aligarh, Farrukhabad, Moradabad, Ferozabad, Kosi, Sikandra, Shahdara) were completed or much advanced.

Of the dozen water-supply and drainage projects at Dehra Dun, Jhansi, Cawnpore, Allahabad, Lucknow and Muttra, those at Dehra Dun and Jhansi may just be mentioned.

An estimate for supplying water to Dehra Dun from the Baldi springs has been sanctioned. The work will be commenced as soon as funds are made available.

The Railway and Military authorities at Jhansi have agreed to pay their shares towards the project for water-supply, and the municipal board is investigating means of financing the work.

Drainage.—The extension of drainage systems is hampered by a shortage in water-supply and lack of funds to meet capital cost of sewer construction.

The following table shows what is being done in the larger municipalities in regard to water-supply and drainage flushing :—

Municipality.	Gallons per head consumed daily.	Miles of drains flushed daily.	NO. OF SAMPLES ANALYSED.			REMARKS.
			Chemical.	Bacteriological.	Total.	
Benares	30.10	93 miles	111	616	727	*(Including 48 by Medical Officer of Health.)
Lucknow	12.2	197 "	2	147	149	
Cawnpore	29.8	117 "	84	809	941*	
Agra	24.7	69 "	24	117	141	
Allahabad	22.7	41.5 "	8	638	646	

Municipality.	Galloons per head consumed daily.	Miles of drains flushed daily.	NO. OF SAMPLES ANALYSED.			REMARKS.
			Chemical.	Bacteriological.	Total.	
Mirzapur	12.6	9 miles	37	37	74	
Muttra	19.73	1,56,165 ft	8	27	35	
Meerut	10.8	1,82,588 "	10	401	411	
Dehra Dun	6.1	9 miles.	10	39	49	
Mussoorie	23.07	5 "	8	141	149	
Naini Tal	7.26	6,340 ft.	4	156	160	

186. *Board of Public Health.*—Rules for the constitution and functions of the Board were revised, approved and gazetted.

Eight meetings of the Board were held during 1923.

The total amount at the disposal of the Board for expenditure on sanitary works during the year amounted to Rs. 8,67,773 which included Rs. 3,60,000 sanctioned for water-supply schemes at Lucknow and Fyzabad, Rs. 1,00,000 for rural sanitation and minor works, Rs. 1,35,138 for general purposes, and Rs. 35,000 for urban sanitation. Loans to the value of Rs. 3,88,500 were sanctioned by Government to Lucknow and Fyzabad, and a grant of Rs. 5,51,739 to Lucknow for a water-supply scheme, sewage and sullage farm and pumping station.

Administrative approval was granted to projects for water works, drainage and sewerage works. General schemes discussed by the Board amounted to Rs. 38,49,010.

The attention of Government was invited to the unsatisfactory condition of the machinery and surroundings of Cawnpore water works and to the wastage at Lucknow, Cawnpore and Agra. A note on 'maintenance of water works' by the Mechanical Engineer was considered by the Board; as were also municipal water works analysis tables of the Director of Public Health; improvements in rural sanitation and the difficulties attaching to this. The Board circulated standard type designs with specifications for the installation of hand pumps in the various types of wells.

PUNJAB.

187. During the year 1922-23, the number of municipalities (103) increased by one. Excluding the opening balance of Rs. 44,09,282, the income during the year amounted to Rs. 92,89,780. The total municipal expenditure on public health and vaccination was Rs. 50,92,384 which included Rs. 17,59,579 spent on water-supply, Rs. 16,32,418 on conservancy and Rs. 4,47,841 on drainage.

The income of the district boards, excluding the opening balance, amounted to Rs. 1,35,10,129 whilst expenditure on public health and vaccination was Rs. 2,59,710.

Further comment on such figures is unnecessary.

7,398 wells were cleaned and 314 parapets were constructed at a total cost of Rs. 42,701.

The income derived from the sale of street sweepings in municipal towns during 1923 amounted to Rs. 5,94,141 against Rs. 2,83,271 in 1922. There were 1,295.92 acres of land under sewage irrigation in the principal towns in the province and Rs. 90,409 were realised from this source.

188. *Sanitary Board*.—The Board met six times during the year.

The whole of the balance of last year, *viz.*, Rs. 1,35,858 was devoted to water-supply, drainage schemes and a market.

A fresh grant of 4½ lakhs was placed at the disposal of the board during 1923-24. Of this, grants amounting to Rs. 1,54,663 were made up to 31st December 1923. Fourteen water-supply and drainage schemes involving an expenditure of Rs. 4,27,463 were approved by the board and 4 others were accorded revised administrative approval. Government in the civil department accorded administrative approval to the water-supply extension schemes at Rawalpindi and Campbellpore and the drainage scheme at Ludhiana at a total cost of Rs. 11,08,602.

The criticism levelled at the local bodies is pertinent and is quoted *in extenso* :—
“Local bodies are apparently incapable of appreciating the vital necessity of proper maintenance, examples of machinery being ruined through neglect being numerous. Much the same applies to building regulations as local bodies make no attempt to prevent encroachments and seldom enforce building bye-laws. Unless Municipal Committees can be made to appreciate their responsibilities by superior authority the evil will rapidly outpace the remedy.”

Financial stringency evidently greatly hampered the work of the Board and it is hoped that the annual allotment to the Board will soon be increased otherwise progress will be brought to a stand still.

The Sanitary Engineer reports that projects to the value of Rs. 57,00,000 were prepared and scrutinized; and that well boring work has greatly increased by reason of the improved and more rapid methods employed.

NORTH-WEST FRONTIER PROVINCE.

189. The income of the municipalities and notified areas amounted to Rs. 26,94,307. Of this Rs. 6,74,828 were spent on sanitary works, the main items being water supply Rs. 3,09,417, conservancy establishment Rs. 2,51,273 and drainage Rs. 37,200.

The district boards out of an income of Rs. 7,38,698 spent Rs. 22,220 on sanitation—much too low a figure.

The amount given by Government as a grant-in-aid to local bodies amounted to Rs. 43,750.

There is much room for improvement here.

CENTRAL PROVINCES.

190. The total income of municipal towns during 1922-23, exclusive of loans and balances, amounted to Rs. 52,01,531 against Rs. 47,48,357 in the previous year. Of this, Rs. 19,80,277 were spent on public health purposes, or 38 per cent. of the total against 46 per cent. in 1922 and 50 per cent. in 1921.

The Director of Public Health remarks “not only has the expenditure on public health failed to rise *pari passu* with the increasing revenue but the actual expenditure

has been cut down by retrenchment in some cases. This shows how little the committees realise their responsibility for the prevention of disease and saving of life."

Owing to financial difficulties the sanitary schemes continued to be restricted, only recurring grants being given (Rs. 36,724).

The apathetic and indifferent attitude of municipal committees is still manifest in some towns and this hinders any progressive improvement in the health conditions of these towns. The indictment of certain towns (Akola being an exception) by the Director of Public Health is a very serious one and he especially mentions Jubbulpore where conditions are the reverse of satisfactory. His comments are worthy of the closest attention.

In two of the three towns where drainage works and piped water-supplies have been provided, death rates have diminished. The third town has shown a high mortality due to plague epidemic.

Water-supplies.—Two water works (Akola and Damoh) were handed over to the respective municipal committees during the year. An estimate amounting to Rs. 33,00,000 for improving the water-supply of Amraoti town has been submitted.

Drainage.—The revision of the scheme for the improvement of the existing drains, etc., in Murwara town is in progress. A modified project for the Itarsi Drainage Scheme, estimated to cost Rs. 55,000 has been administratively approved by the local Government.

191. *Board of Public Health.*—The Board held only one regular sitting during the year and discussed, among others, the following subjects :—

- (a) the Itarsi drainage scheme ; and
- (b) proposals for a Public Health Research Institute at Nagpur.

MADRAS.

192. The number of municipalities in the Presidency during 1923 remained the same.

The total allotment for sanitation for municipalities amounted to Rs. 46,02,788 and the expenditure to Rs. 29,09,170 against Rs. 37,32,601 and Rs. 23,47,455, respectively, in the previous year. Of this total, conservancy absorbed Rs. 20,26,650 and water-supply Rs. 9,02,957.

Rural Sanitation.—The district health staff paid much attention to conservancy in rural areas in view of the widespread heavy prevalence of ankylostome infection and to this end type design latrines were being recommended. Great improvement in this respect should result in time. The aggregate expenditure on sanitation for the nine months of 1923-24 for which information is available was Rs. 3,19,360 or 54.6 per cent. of the allotment against Rs. 9,85,213 or 65.2 per cent. in 1922.

BOMBAY.

193. Three municipalities were abolished during the year, thus reducing the number to 156. The aggregate income of these municipalities during the year amounted to Rs. 1,80,20,697 and the expenditure on public health to Rs. 58,78,845 including Rs. 28,40,758 for conservancy, Rs. 16,74,654 for water-supply and Rs. 7,21,384 for drainage. Of the income Rs. 1,22,71,154 or just 68 per cent. was raised by

taxation, giving an incidence, per head of population, of Rs. 4-9-7. Taxation varied between Rs. 12 per head in Karachi city and annas 6 pies 8 in the small municipality of Batavad in West Khandesh. The expenditure on public health measures in Karachi city equalled Rs. 6 per head of population and averaged slightly under Rs. 2 for all the remaining municipalities.

18 sanitary surveys were made by Assistant Directors of Public Health and 60 towns received advice from them. Many of the municipalities acted upon this advice in matters of conservancy, water-supply, the prevention of spread of epidemics and in measures of a more general nature. The Sanitary Board Secretary points out that a marked feature of the year was the growth of the realisation by local bodies throughout the Presidency of their responsibilities in connection with works of public health and sanitary improvement and of their readiness to help in financing the same.

The Nasik system of trenching night soil is in satisfactory operation in eleven towns in Gujerat; but a large number of municipalities still remain below standard in conservancy establishment and sanitary implements.

No town improvement scheme for which Government grants were provided was completed during the year.

The combined income of the 27 District Local Boards and 221 Taluka Local Boards amounted to Rs. 1,48,98,144. Income and taxation per head of population were 15·1 and 3·1 against 13·8 and 3·4 annas in 1922. These bodies spent Rs. 3,00,752 on public health work. A grant of Rs. 11,00,000 was placed at the disposal of the Commissioners of Divisions for distribution among District Local Boards for improvement of communications and objects other than educational. A grant-in-aid of Rs. 1,20,000 for improvement of village water-supplies was also sanctioned. These grants were supplemented by allotments from Local Boards and popular contributions and were spent on the construction of wells, tanks, troughs and cisterns, in repairing old wells, closing step-wells, in deepening tanks and in boring operations.

Land was acquired with the object of relieving overcrowding in certain districts and village planning received attention.

The population served by the 21 notified area committees was 72,044. The total income from revenue excluding opening balance came to Rs. 2,79,850 giving an incidence of income per head of Rs. 3-14-0.

There were 376 Sanitary Committees against 420 in 1922; the reduction is due to the establishment of the village panchayats. Their total income including opening balance amounted to Rs. 4,03,202 and the expenditure to Rs. 2,06,536.

194. *Sanitary Board*.—The Board held three meetings during the year. The most important subjects dealt with were :—

- (1) The recognition of the Indian Diploma in Public Health in connection with the appointment of Health Officers of first class Municipalities.
- (2) The recommending of total exemption from establishment, tools and plant charges in the case of projects for local bodies, when a considerable portion of the cost has been raised by local contributions.
- (3) The functions and constitution of the Sanitary Board.

Owing to financial stringency no funds were placed at the disposal of the Board for distribution for minor sanitary schemes.

Water-supply works were under construction at Sukkur, Hyderabad, Karachi, Ahmedabad, Surat, Nasik, Matheran, Poona (Cantonment and City), Ahmednagar, Pandharpur, Sholapur, Belgaum; well-boring operations were in progress at Auen, Karachi, Ahmedabad district, Broach district, Surat district, West Khandesh district

Southern Maratha Agency, and Belgaum district; drainage operations were in progress at Karachi, Ahmedabad, Nasik, Poona, Alandi, Sholapur, Belgaum, Baramati. 46 other schemes were considered in a preliminary way.

BURMA.

195. A sum of Rs. 59,07,86½ was spent on civil sanitary works. Of this, Rs. 55,55,89½ were expended on behalf of towns and Rs. 3,51,970 on that of rural areas of districts. Of the aggregate income of municipalities and districts, conservancy absorbed 7.58 per cent. of the total, water-supply 6.62, and drainage 1.23 per cent.

196. *Board of Public Health.*—The Board met four times during the year.

Grants amounting to nearly Rs. 63,000 were made for sanitary works during the year; the main items being Bassein water-supply (Rs. 20,424), Maymyo Septic Tank (Rs. 12,332) and Wakema trenching ground reclamation (Rs. 12,000).

The question of the establishment of a sanitary institute at Rangoon was discussed at a meeting of the Board. It was agreed that there was a need for an institute of the kind and a provision of Rs. 1½ lakhs in the 1924-25 budget was asked for building.

SECTION VIII.

Laboratories and Medical Research.

197. *Central Research Institute, Kasauli.*—Lieutenant-Colonel W. F. Harvey, C.I.E., I.M.S., held charge of the Institute from 1st to 30th January 1923 when he proceeded on leave. Lieutenant-Colonel S. R. Christophers, C.I.E., O.B.E., I.M.S., officiated as Director from 31st January to 16th August 1923 and again from 22nd September to the end of the year. Major F. W. Cragg, I.M.S., acted as Director from 17th August to 21st September 1923 during the absence of Lieutenant-Colonel S. R. Christophers to attend the 5th Congress of the Far Eastern Association of Tropical Medicine in Singapore.

Besides his delegation to this Congress, Lieutenant-Colonel S. R. Christophers was on deputation from 5th to 18th March 1923 for a general preliminary survey in connection with the prevalence of malaria in Bombay docks, and again from 2nd to 10th October 1923 to advise the Government of Bombay on anti-malarial measures to be taken in connection with the Back Bay reclamation scheme. He was also a delegate at the Medical Research Workers Conference held at Calcutta from 27th October to 3rd November 1923.

The malaria and entomological sections continued to function during the year.

Research workers.—The following officers of the Indian Research Fund Association worked at the Institute:—

1. Major J. A. Sinton, V.C., O.B.E., I.M.S., in charge Malaria and Quinine Inquiry.
2. Captain R. H. Malone, I.M.S., in charge Pneumonia Inquiry.
3. Honorary Captain P. J. Barraud, in charge of Inquiry upon Indian Culicidae.

Facilities were provided for one Assistant Surgeon and one woman doctor of the Patiala Government to acquaint themselves with laboratory methods, bacteriological technique, etc. Two civil assistant surgeons from Madras were trained in malaria work. In addition to one military sub-assistant surgeon and one laboratory attendant of the Indian Research Fund Association, three persons from Delhi Province were trained in media making, staining and preparing stains, etc.

The Institute continued to manufacture and issue prophylactic and curative vaccines and anti-sera, to distribute imported sera, to examine specimens microscopically and bacteriologically, to supply scientific stores and to publish research work. The following quantities of vaccines were issued during the year :—

Vaccines—

Prophylactic cholera vaccine	424,213.5 c.cs
Prophylactic mixed typhoid and paratyphoid vaccine	284,674 c.cs
Prophylactic mixed influenza vaccine	37,127 c.cs
Curative vaccines	16,009 c.cs

Anti-sera—

Anti-venomous serum	89,880 c.cs
Normal horse serum	3,680 c.cs
High titre agglutinating sera	494 c.cs

The usual routine work in connection with the supply of cultures and other material for serological tests was also carried on, and autogenous vaccines were prepared for 79 cases.

Anti-tetanic, anti-streptococcal, anti-diphtheritic, anti-anthrax, anti-meningococcal and anti-dysenteric sera imported from England, were stocked and issued on demand.

654 specimens of pathological material, etc., including 273 bloods for Wassermann test, 70 for Widal's test, 147 for other examinations and 85 tumours for section cutting were examined and reported on.

The Institute supplied scientific apparatus and chemicals, etc., on payment to civil and military medical officers and private practitioners as usual.

Research work.—During the year 31 original papers were published in the Indian Journal of Medical Research by members of the staff of this Institute. A complete and detailed list of these will be found in the Appendix to Section VIII of Part I of this report (page LII). These included papers on bacteriology, immunology, preparation and potency of vaccines and vaccine lymph, protozoology, protistology, medical entomology and zoology, malariology, anti-venine preparation, chemistry and alkaloidal poisoning.

In June 1923 the editorial work of the Indian Journal of Medical Research was transferred to the Directors of the Central Research and Pasteur Institutes, Kasauli, in consequence of the abolition of the appointment of the Director of Medical Research on the recommendation of the Inchcape Committee, and since then the Journal has been edited there.

198. *Bombay Bacteriological Laboratory.*—Major J. Taylor, D.S.O., D.P.H., I.M.S., officiated as Director from the 1st January to 20th March and Lieutenant-Colonel F. P. Mackie, O.B.E., M.D., M.Sc., F.R.C.P., F.R.C.S., I.M.S., from the 30th

March to 31st December 1923. Major J. Morison, M.B., D.P.H., I.M.S., Dr. D. A. Turkhud, M.B., C.M., and Dr. S. N. Gore, L. M. & S., in charge of anti-rabic, plague, and chemical sections, acted as Assistant Directors throughout the year.

Plague work.—The principal work of this Laboratory is the manufacture of Haffkine's plague prophylactic. The output in doses was nearly 3 lakhs more than in 1922 and over 4 lakhs more than in 1921. As the manufacture of this vaccine is of such far reaching importance to the rest of India and to other countries, certain research work in connection with its production has been described in some detail for general information, and the report of the Director has been quoted from freely. Investigations were commenced with a view to possible improvement in the process of manufacture, particularly in the direction of reducing the dose and of lessening the local inflammatory reaction resulting from its inoculation. Major Morison, I.M.S., assisted by Dr. Naidu (who received a grant from the Indian Research Fund Association) and Dr. Avari carried out these investigations which are as yet incomplete. As this is the largest plague vaccine manufactory in the world, the conclusions so far arrived at are of importance from the point of view of future vaccine manufacture and are given in some detail:—

“In estimating the value of the various components of Haffkine's vaccine, namely, the deposit which consists of the dead bodies of the bacteria, the supernatant fluid which contains the soluble portion of the bacterial content as compared with the whole prophylactic as ordinarily issued it was found (a) that the sediment is non-toxic and also of little immunising power, (b) the supernatant fluid is of equal immunising power with the whole prophylactic and is slightly less toxic.

Theoretically then the vaccine might be improved by discarding the sediment and using only the supernatant fluid. It is thought that the revolution necessary in the manufacture of vaccine would not be justified by the somewhat hypothetical results to be obtained.

The second experiment was to ascertain whether certain methods of treating the vaccine such as have recently been suggested by Professor Dreyer in the case of tuberculosis antigens are applicable to plague vaccine. This is brought about by extracting the plague bouillon with formalin and acetone. Results were obtained showing that this method of ‘defatting’ vaccines totally destroyed the immunising power of the prophylactic; so the experiments were discontinued.

The third series of experiments were undertaken to ascertain whether a more powerful prophylactic could not be obtained by growing the plague bacillus on solid agar media, instead of in the liquid broth medium as at present. It was thought possible that some of the inflammatory reaction in the human subject might be caused by the soluble product of meat digestion which exists in the broth. Plain broth without the plague bacillus was not, however, found toxic to rats. The experiment showed that vaccines made from agar cultures were not less toxic and not markedly superior in immunising power to the broth prophylactic as made at present, and that no improvement in the manufacture of the vaccine was to be expected from this procedure. Further, the oral administration of the whole prophylactic with or without bile appears to afford little or no protection to guinea pigs against subsequent infection by plague.”

The number of doses of plague vaccine issued during the year was 1,298,415 (quinquennial average=1,114,717). Each dose is reckoned as 4 c. c., but when used within three months of the date of manufacture a dose of only 3 c. c. is recommended. Countries outside India took 133,715 doses.

During the year, 725,916 rats were received at the laboratory. Of this number 429,176 were dead when received. Of these 305,343 were examined and among them 8,476 or 2·77 per cent. were found plague infected. The infection curve rises rapidly during January, February and March, to its maximum in April and drops rapidly in May and June.

Schemes for the establishment of a pharmacological unit for investigation of the values of indigenous drugs and for the establishment of a biochemical unit were practically sanctioned. The Governing Body of the Indian Research Fund agreed to provide Rs. 18,000 for the former for the pay of the pharmacologist and budgetted Rs. 62,000 for the latter.

The anti-rabic section continued to develop under Major Morison, I.M.S. Out of 1,368 persons who applied for treatment during the year, 845 received full treatment. Four hundred and eighteen who were not considered at risk were advised that treatment was unnecessary and discontinued it, while the remaining 105 persons discontinued treatment of their own accord before completing the course. Nine failures are reported among the 845 cases—a mortality of 1·06 per cent. During the year the vaccine was given intravenously to cases which were bitten severely by dogs proved to be rabid or whose behaviour was such that they were almost certainly rabid. This intensive use of the vaccine, which is a new departure, was begun with great caution. The report should be consulted for details; meantime, however, the effects of the method are being carefully watched.

The brains of 243 dogs and other animals were examined for rabies. Negri bodies were found in 148 (60·9 per cent.).

The development of district treatment centres has continued; 6 civil and 4 army centres have been started in the Bombay Presidency, some in the Central Provinces and one at Goa. Vaccine is being issued in ampoules from Parel. Comparative figures will be awaited with interest.

During the year under report, 29 samples of water were examined bacteriologically and 156 chemically.

Several cases of snake bite were successfully treated at the Laboratory with anti-venine. The stock of live snakes was added to, and venine was obtained and sent to Kasauli for manufacture of anti-venine as usual.

Educational—Special demonstrations and lectures were given to students.

A number of sets of magic lantern slides on plague, tuberculosis, malaria, milk, and snakes were prepared and issued; exhibits on plague, milk and flies were shown at the Ahmedabad Exhibition, the Bombay and Broach Baby Week Exhibitions, and enlarged photos of the same were lent to different local bodies.

One sub-assistant surgeon was given a course of instruction in plague preventive measures, and another received training in bacteriology and pathology. Two medical men underwent a course of practical training in bacteriology and four were taught the technique of inoculation.

Research work.—A resumé of this will give some idea of the type of work during the year and a list of papers published will be found at the appendix to Section VIII of Part I of this report (page LII)—

(a) That on plague vaccine has been already alluded to.

(b) Major J. Taylor, D.S.O., I.M.S., and Dr. G. D. Chitre experimented with *X. cheopis* and *X. astia* and were able to show that *X. astia* could transmit epizootic plague under the climatic conditions of Bombay. They made valuable suggestions regarding the epidemiology of plague in India

which require further research work. They also invented and described an electric rat-guard (*Indian Journal of Medical Research, Volume IX, No. 2, October 1923*).

- (c) Lieutenant-Colonel F. P. Mackie, I.M.S., and Dr. G. D. Chitre investigated the presence of *Sp. ictero-hæmorrhagica* and *Sp. morsus muris* (Sp. of rat-bite fever) in Bombay wild rats.
- (d) Dr. Gore elaborated a simple method of preparing a series of 10th dilutions, a simple method of detecting and estimating indican in the urine, and a simple method of classifying colon, typhoid and other similar bacilli for provisional identification.
- (e) Dr. Hamilton Fairley, O.B.E. (an all time research worker) continued his researches on guinea worm disease and on bilharziosis in man and experimentally infected animals; details of this work are being published.
- (f) Lieutenant-Colonel F. P. Mackie and Dr. Chitre began a series of investigations on sprue.

199. *King Institute, Madras*.—Lieutenant-Colonel J. Cunningham, M.D., I.M.S., was in charge of the Institute during the year except for a period of about one month from 16th August to 25th September 1923, when he attended the Far Eastern Congress of Tropical Medicine at Singapore as a delegate of the Madras Government. During this period Dr. K. S. Mhaskar, M.D., officiated. Major J. A. Cruickshank, I.M.S. and Dr. K. S. Mhaskar acted in succession as Assistant Directors.

The Institute functioned as the vaccine lymph depot for the Madras Presidency, as the manufactory for vaccines, as a clinical and public health laboratory for the Presidency and as a research laboratory for the investigation of problems connected with public health and medicine.

A scheme for increase of and alterations to the existing building so as to modernise the lymph vaccine department has been accepted by Government.

For the first time in the history of the Institute, glycerine lymph has been the only lymph issued throughout the Presidency. This change was the result of a prolonged investigation into the relative merits of glycerine and lanoline lymphs in the climate of Madras. The vaccination results this year are therefore of exceptional interest for they constitute a searching test of the validity of the conclusions reached—*vide* Section V.

Bacterial vaccines.—62,521 doses of bacterial vaccines were issued,—a slight decrease due to the smaller demand for combined typhoid and paratyphoid and meningococcus vaccines.

7,546 specimens were examined at the Institute.

The Institute continued to purchase, store and distribute the anti-toxic sera required for the medical institutions of the Madras Presidency.

Public Health.—242 specimens of a public health nature, excluding water were examined—an increase of 60 per cent. over that for 1922-23. 1,104 samples of water were examined.

Investigation units.—Two such units were in the field for the best part of the year and besides making a malarial survey over a forest exploitation area, they investigated outbreaks of cholera, relapsing fever and gastro enteritis, thus assisting both Jail and Forest Departments and several municipalities.

Educational and propaganda work.—Vaccination, malarial and plague inoculation classes were held; and several private practitioners, assistant and sub-assistant surgeons

and a water works supervisor attended for instruction. Lantern slides, lectures, and exhibits for health and child welfare work were prepared.

Research work.—Apart from the vaccine and epidemic unit work alluded to, research work into various aspects of relapsing fever was carried on and has yielded important results which will be published. Investigations into water bacteria were also carried out.

During the year six papers were published in the Indian Journal of Medical Research and in the Indian Medical Gazette by the staff (Cunningham, Cruickshank, Theodore, Krishnan, Raghavachari), and details of these will be found in the Appendix to Section VIII of Part I of this report (page LII). Amongst other subjects, they dealt with latent dysentery, lactose fermenter differentiation in India, lanoline and glycerine lymph.

This Institute has steadily increased in efficiency and the great expansion of work during the last three or four years has now necessitated a complete scheme of staff reorganisation and a new building programme.

200. *Pasteur Institute of India, Kasauli.*—Major W. D. H. Stevenson, C.I.E., M.D., I.M.S., was in charge of the Institute throughout the year.

7,272 persons (671 Europeans and 6,601 Indians), the second highest number since the Institute opened, received a full course of treatment.

The classes treated were British Army 356, Indian Army 246, European civilians 260 and Indian civilians 6,410. Of these civilians 431 were Government servants. A further decrease has taken place to 246 (284 in 1922) in the patients from the Indian Army. 261 patients were not considered "at risk" and treatment was unnecessary or was discontinued on receipt of information that the biting animal was not rabid.

Of those who received treatment 72 contracted the disease and died; 10 died during the course of treatment—3 of these being jackal bites and 1 a wolf bite; 20 died within 15 days of their discharge and 42 died subsequent to 15 days of their discharge. The failure rate, which was calculated on the usual basis, was 0.58 per cent and the total death rate for all patients during and after treatment was 0.99 per cent. (1 per cent. in 1922).

The development of Pasteur treatment by the issue of carbolised fixed virus to selected provincial centres has been the subject of considerable discussion in scientific circles in India and has received the close attention which it merits. Experiments regarding the effect of high temperatures on the vaccine are in progress, and data are being assembled. Meantime the Institute has issued small quantities of vaccine on ice, accompanied by special instructions, for use in special cases or at selected centres.

201. *Pasteur Institute of Southern India, Coonoor.*—Lieutenant-Colonel J. W. Cornwall, M.D., I.M.S., was the Director until the 4th July and Major J. A. Cruickshank, M.D., I.M.S., during the rest of the year.

The number of patients treated at the Institute during the year was 1,354, a decrease of 2,021 on the number treated during the previous year. The decrease was due to the extended issue of the anti-rabic vaccine to Government Headquarter Hospitals in the Presidency. No patient died during the course of treatment; two died less than 15 days after the completion of the treatment and two died more than 15 days after the completion of treatment. The last are classed as failures, giving a ratio of 0.29 per cent. Thirty-nine persons for various reasons did not complete the full course of treatment. Advice, without treatment, was given to 160 persons. The virus was in its 891st passage on February 1924.

The inquiry into the mortality due to rabies was continued during the year. Of the 829 persons treated, so far 24 deaths from hydrophobia occurred giving a percentage of 2.8, as compared with 88 deaths or 6.3 per cent. amongst the untreated (1,388) as estimated on lines devised by the Director. The investigation indicates that the riskrun of dying from hydrophobia, if bitten by a rabid animal, really infective, is not less than 1 in 3 and so far as our information goes this risk may be diminished by one half by the anti-rabic treatment.

Carbolised fixed virus, similar to that used at the Institute, was issued as required under special precautions and with special instructions to all Superintendents of Government Headquarter Hospitals in the Presidency, to the General Hospital, Madras, and to other approved institutions or officers. Conditions of transit are doubtless more favourable in Madras than in the sun baked Indo-Gangetic plains; but the procedure which is being watched carefully is giving results, which according to the Director, compare favourably with those obtained in the main Institute at Coonoor. For a proper critical appreciation of results, however, it will be necessary for medical officers to follow up results as closely as possible.

Research work.—Papers dealing with researches carried out by the staff of this institute (Lieutenant-Colonel Cornwall, I.M.S., and Assistant Surgeon LaFrenais) and by Lieutenant-Colonel McCarrison, I.M.S., were published in the Indian Journal of Medical Research and a complete and detailed list of these will be found in the Appendix to section VIII of Part I of this report (page LII).

202. *King Edward VII Memorial Pasteur Institute, Shillong.*—Major H. E. Shortt, I.M.S., officiated as Director from 1st to 15th January, Lieutenant-Colonel F. P. Mackie, I.M.S., from 16th January to 24th March, Major H. E. Shortt, I.M.S., from 25th March to 10th June and Lieutenant-Colonel E. C. Hodgson, D.S.O., I.M.S., from 11th June to 31st December 1923.

2,371 persons, including 150 Europeans, completed treatment (an increase of 35 per cent. over 1922); 18 absconded, and 30 discontinued treatment on institute advice as not being 'at risk.' Two patients died during treatment. The number of deaths from hydrophobia was 22, of which 12 died more than 15 days after completing treatment. The total hydrophobia death rate under all circumstances was 0.93 per cent. and the total failure rate 0.51 per cent. Twenty-one per cent. of the cases were bitten by jackals. The hydrophobia rate for jackal bites is 1.23 per cent. as compared with 0.85 per cent. for dog bites.

Bacteriological and clinical research section.—The total number of examinations was 2,347 (2,035 in 1922).

I quote *in extenso* some of the Director's observations regarding the Kala Azar Hospital as they are of much interest. 104 patients (excluding two cases which remained at the end of last year) were admitted to the Kala Azar Hospital. Twenty-two were proved to be suffering from other diseases and were discharged. Of the 84 cases of kala azar 65 were discharged, cured as evidenced by microscopic and cultural examination of splenic and hepatic blood and 5 left the hospital before completion of the full course. Seven died during the course of treatment and 7 remained under treatment. Of the 84 cases of kala azar, 29 cases were treated by Urea Stibamine alone, 7 cases by Tartar Emetic and afterwards by Urea Stibamine, 2 cases by Bayer's 205 and afterwards by Urea Stibamine, 1 case by Urotropin and afterwards by Tartar Emetic and 45 cases by Tartar Emetic alone. Bayer's 205 and Urotropin were found to be without effect on kala azar. Urea Stibamine which is still under investigation, proved to be the most effective drug (*vide* Indian Journal of Medical Research, Volume XI, No. 2, October 1923).

Research work.—The research work carried out by the staff during the year was chiefly confined to kala azar and the results were described in ten papers, nine of which were published in the Indian Journal of Medical Research and one in the Indian Medical Gazette. Full details of these publications will be found in the Appendix to Section VIII of Part I of this report (page LII).

Vaccine Section.—The following amounts of vaccines were issued during the year :—

	c. cs.
Influenza vaccine	18,585
Cholera "	71,630
T. A. B. "	748

As in 1922 all European children in the Shillong schools (242) who were found susceptible to the Schick test were immunised and diphtheria remained absent.

203. *Burma Pasteur Institute and Bacteriological Laboratory**.—Lieutenant-Colonel T. H. Gloster, M.B., D.P.H., I.M.S., occupied the post of Director of the Institute from 1st April to 9th May 1923 and on return from leave from 18th February to 31st March 1924; during his absence Major J. Taylor, M.D., D.S.O., D.P.H., I.M.S., officiated. Captain R. H. Malone, M.D., I.M.S., was attached to the Institute for part of the year.

704 patients completed a full course of treatment (545 in 1922-23); 490 were advised that they were not 'at risk'; 33 discontinued treatment for the same reason after the biting dogs, health had been verified; 84 patients discontinued voluntarily. Three persons died of hydrophobia during the course of treatment. Out of 824 cases who attended for bites, the biting animals were dogs in 812 cases, cows in 4, cats in 3, rabid. . . . donkey, calf, mare and jackal one case each. The case of jackal bite is the first monkey; no. who received recorded this institute since 1915. (inflicted in Burma) persons treated The brains of 119 animals were examined. 61 were found by microscopic tests to be rabid.

The fixed virus was in its 464th passage on 31st March 1924.

Bacteriological section.—The number of examinations was 4,584. 368 autogenous vaccines were prepared.

Issues of sera from the stock maintained in cold storage show a considerable increase.

Research work.—(a) Major Taylor, I.M.S., and Captain Malone, I.M.S., carried out a series of experiments on the Complement fixation diagnosis of leprosy by means of a defatted B. tuberculosis antigen. A technique for the preparation and standardisation of the antigen was devised and a test, full details of which were worked out, gave a very high percentage of positive results with known cases of leprosy. A complete report on the work will be published in the Indian Journal of Medical Research.

(b) Five samples of insulin from the different manufacturers were tested during the year, 31 rabbits being used for the tests and blood sugar estimations carried out in most of the cases. With the exception of one sample which was especially imported in cold storage all were found to be very much below their original potency. The former sample was up to full original potency. Further tests now being carried out indicate that the insulin which is now being received is more satisfactory. Reports on this have appeared from time to time.

(c) *Surra.*—1,888 animal bloods from military transport in Rangoon were examined in a local outbreak and the Institute prepared the tartar emetic injections and assisted in the inoculations.

(d) *Tavoy ulcers.*—Work on an outbreak of these ulcers in Tavoy district was carried out.

204. *The Indian Research Fund Association.*—The various papers published in the Indian Journal of Medical Research and in the Indian Medical Gazette on the undermentioned subjects by workers under the association will be found listed in detail in the Appendix to Section VIII of Part I of this report (page LII).

Leprosy.—Dr. E. Muir continued this inquiry at the Calcutta School of Tropical Medicine and Hygiene. He reports as follows:—

- (a) Improvements have been reported in the preparation of esters from oils for the treatment of leprosy. The esters can be prepared without boiling, *i.e.*, by leaving the mixture either at room temperature or in the sun for some days. The process is easy and is possible in any leper asylum where treatment is carried out.
- (b) Good reports have been received regarding the therapeutic use of thymol in leprosy by subcutaneous and intra-muscular injection as a 10% solution in olive oil. It is, however, inferior to Hydnocarpus esters.
- (c) Hydnocarpus esters have been found superior to linseed esters and antimony (408 cases were observed).
- (d) The effect of cod liver oil esters in treatment is being compared with that of hydnocarpus esters.
- (e) Interesting results have been reached in testing the serum of a large number of lepers for complement fixation against an antigen prepared by Major Taylor, I.M.S., in the Rangoon Pasteur Institute.
- (f) Experiments in transmission of leprosy to animals and the microscopic examination of varicous lesions found in leprosy continue.
- (g) The relationship of syphilis and leprosy has been investigated (*vide* I. J. M. R., Vol. XII, No. 1, July 1924). Tables showing results of Wassermann reactions in leprosy cases have been prepared.
- (h) Injections of defatted lepra and other acid fast bacilli failed to produce any marked results.
- (i) Tests and experiments have been carried out in regard to the sterilization of esters prior to injection.

Dr. Nishi Kanta De continued to carry out the chemical work in connection with the preparation of ethyl esters from various oils tested by Dr. Muir in the treatment of leprosy.

Since 1918 the Indian Research Fund Association has met the cost of training doctors in the new treatment of leprosy and the asylum expenditure in connection therewith and for this a sum of Rs. 5,000 was allotted for the year under review, whilst Rs. 10,000 was given for the research work. The whole was under the supervision of Dr. E. Muir.

Pneumonia.—Captain R. H. Malone, I.M.S., with the cooperation of the military authorities, continued in Quetta the treatment of a series of cases of pneumonia with pneumococcus vaccine. The results obtained have been examined statistically by Major H. H. King, I.M.S. The inquiry was closed on 31st May 1923 on account of retrenchment.

Deficiency Diseases.—Lieutenant-Colonel R. McCarrison, C.I.E., I.M.S., continued this inquiry on lines similar to those of last year. The inquiry was closed on 30th November 1923 owing to retrenchment.

(a) Experimental and chemical investigation in regard to 22 different rices have been done with results of fundamental importance in relation to the prevention of beri-beri.

(b) Nutritional and chemical experiments regarding effects of conditions of growth, manure, etc., on the initiative and vitamin—values of various grains were carried out in part or whole and the results would appear to be promising.

(c) The following additional experiments were made during this year :—

- * (a) Effects of certain aminos on the animal organism.
- * (b) Effects of certain amino-acids on the animal organism.
- * (c) Effects of certain excess of calcium on the thyroid gland.
- * (d) Effects of certain excess of calcium iodine on the thyroid gland.
- (e) Effects of certain excess of protein on the thyroid gland.
- (f) Effects of certain excess of sugar on the thyroid gland.

Important papers on the work done have appeared in the Indian Journal of Medical Research.

Revision of Indian Culicidae.—The inquiry continued throughout the year. Captain Barraud has written eleven papers on the subject (*vide appendix*). He has described many species new to science and several which, though previously known to science, have been found in India for the first time. His work has been much sought after outside of India and is a very valuable contribution to this subject.

Kala Azar.—(a) The kala azar inquiry in Assam was continued by Major H. E. Shortt, I.M.S., under the direction of the Assam Scientific Research Committee on lines similar to those of last year. Extremely promising results have been obtained by the treatment of this disease by Urea Stibamine and two papers showing the work done have appeared in the Indian Journal of Medical Research.

(b) Transmission investigation work was continued at the School of Tropical Medicine, Calcutta, under Major Knowles and Dr. Napier.

(c) Mr. C. M. Hutchinson, C.I.E., Imperial Bacteriologist, Agricultural College, Pusa, continued certain researches on the bed-bug in connection with kala azar.

(d) Dr. Brahmachari continued his researches into the chemotherapy of antimonial compounds in kala azar. His preparation (Urea Stibamine) was tested in the Research Hospital, Shillong. He has prepared two additional new compounds (Nos. '201' and '202') for the treatment of kala azar. Three papers on the work done have appeared in the Indian Journal of Medical Research.

(e) *Kala Azar Commission.*—At the Conference of scientific workers in Calcutta in the end of October 1923, the Kala Azar Enquiry position was reviewed and proposals were discussed for the formation of a Kala-Azar Commission under the auspices of the Indian Research Fund Association and the Local Governments of the Provinces chiefly affected.

Malaria.—(a) Major J. A. Sinton, V.C., O.B.E., I.M.S., continued his investigations into the action of quinine in the treatment of malaria and its enhanced efficacy when exhibited with alkalis. By a fortunate circumstance the Army authorities had concentrated their chronic malaria cases in a centre at Kasauli (altitude 6,050 feet) and they placed all of these cases at his disposal for treatment, thus allowing of a very practical test being carried out.

(b) Major H. W. Acton, I.M.S., at the Calcutta Tropical School continued his researches into the efficacy of cinchona alkaloid and compounds in the treatment of malaria.

(c) Under advice from the Malarial Bureau, Captain Watts, I.M.S., was lent to the Government of Bihar and Orissa to conduct a malarial enquiry at Singhbhum in Bihar and Orissa.

(d) Lieutenant-Colonel Christophers, C.I.E., O.B.E., I.M.S., from time to time examined and advised on the problem of anti-malarial preventive measures in connection with the Bombay reclamation scheme at Colaba; and also on the problem of the excess of malaria in and around parts of the dock area in Bombay Port.

Ankylostomiasis.—Dr. K. S. Mbaskar carried out the preliminary work on the "Problem of Complement Deviation tests for the diagnosis of Hookworm Infection" at the King Institute, Guindy, up to the end of June 1923. His report on the work done during the last seven years of the Inquiry is being published as a separate memoir.

Lathyrism.—The three aspects of this inquiry, viz., chemical, botanical and pharmacological, were investigated by Dr. J. L. Simonsen (Forest Research Institute), Mr. A. Howard (Imperial Economic Botanist) and Major L. A. P. Anderson, I. M. S. (Central Research Institute, Kasauli).

Pharmacological results are mainly negative, but promise to solve many debated points.

Anti-venine.—This inquiry was continued by the Rev. Father Caius. He made a comparative study of the absorption spectra of normal horse serum and anti-venomous horse serum.

The results obtained from a study of the different methods which can be employed for separating the proteins from anti-cobra serum were embodied in a paper by him in the Indian Journal of Medical Research.

Composition of the River waters in Bengal.—This inquiry by Rao Sahib Govinda Raju was continued. Two of his papers have been published in the Indian Journal of Medical Research.

Anti-plague Vaccine.—This inquiry under Dr. B. P. D. Naïdu was begun on 17th August 1923 at Parel Laboratory, Bombay, with the supervision of the Director and Major Morison, I.M.S. As the work advanced the field broadened and the need for the enquiry became more evident. Our knowledge in this special department of vaccine manufacture requires to be increased so that technique may benefit and inoculation troubles become less pronounced without diminution of efficiency of the vaccine. The work has been described more fully under Parel Laboratory, Bombay.

Bovine Tuberculosis Inquiry.—Dr. M. B. Soparkar is carrying out this enquiry at Muktesar in co-operation with the Director, Imperial Bacteriological Laboratory, Muktesar.

Relapsing and Typhus Fever Inquiry.—This inquiry was undertaken from 1st November 1923 by the late Major F. W. Cragg, I.M.S., in order to find out details of the mode of transmission of relapsing fever and typhus fever with ancillary problems regarding the "Weil Felix" reaction, the presence of Rickettsia, the role of lice, and the epidemic prevalence in these diseases.

Helminthological Inquiry.—Dr. V. T. Korke conducted this inquiry at Manharpur in Bihar and Orissa. He has done valuable work on the migration of the larvae of the ankylostome, the elucidation of the condition of infection of the workers at the mines and the remedies for its eradication.

Insulin.—The arrival in India of quantities of Insulin from the United Kingdom, United States of America and Canada at once raised the question of its potency after transit through tropical seas. Experimental testing in connection with it was undertaken at the Rangoon Pasteur Institute by Major Taylor, D.S.O., I.M.S., at the Calcutta School of Tropical Medicine and Hygiene by Lieutenant-Colonel Megaw, I.M.S., Major Acton, I.M.S., and Dr. Bose. and at other centres throughout India where laboratory experts were stationed. Much patient difficult work with large numbers of samples over a long period was necessary before the facts were finally ascertained. The work done on this question was valuable and would not have been possible without the research appliances available in the different institutions which undertook it.

Training of Subordinate Staff.—Training of the subordinate staff on lines previously laid down had to be discontinued during the year under review on account of retrenchment.

A grant of Rs. 50,000 was made to the Calcutta School of Tropical Medicine and Hygiene to meet the cost of two professors of (1) Tropical Pathology and Bacteriology, and (2) Medical Entomology and Helminthology. A further grant of Rs. 7,500 was made to the Imperial Bureau of Entomology, London.

Indian Journal of Medical Research.—This Journal has just completed its 11th year of existence. It has maintained its high reputation and is now eagerly asked for in exchange or for reference by foreign workers.

205. *Medical Research Workers Conference.*—In view of the recommendations of the Retrenchment Committee having been given effect to and of the temporary stoppage of the research grant of five lakhs in consequence, an informal conference of all medical research workers in India was convened and held at the School of Tropical Medicine and Hygiene, Calcutta, from October 29th to October 31st, 1923. Workers were delegated from all the medical research institutions of the country, the Army was represented, and the Director-General, Indian Medical Service and the Public Health Commissioner with the Government of India attended.

The conference advised on the best means of utilising the funds available for research work on those diseases which required early investigation and on the lines of such investigation; on what further investigation should be carried out when fresh funds were available; and on the co-ordination of medical research work generally. The sessions were instructive and resulted in a profitable interchange of ideas and some useful resolutions, the unanimous desire being expressed that the conference should become an annual event.

Original contributions and publications (vide Appendix to section 8 of Part I, page LII).

J. D. GRAHAM, *Lieutenant-Colonel, I.M.S.,*
Public Health Commissioner with the Government of India.

Appendix to Section I.

EUROPEAN TROOPS.

APPENDIX TO SECTION I.—

RATIO PER MILLE

A.—Groups.	Years.	A.—									
		D.—									
		Average strength.	Constantly sick	Invaliding.	Influenza.		Cholera.		Small-pox.		
			A.	D.	A.	D.	A.	D.			
Group I.—Burma Coast and Bay Island.	1913-22	1,108	46	21.7	14.5	0.09	...	...	0.8	0.27
	1922	1,098	30	5.5	...	...	...	...	...	...
	1923	1,042	37	6.7	...	...	...	...	...	...
„ II.—Burma Inland	1913-22	737	39	8.0	18.7	0.81	...	...	...	...
	1922	195	56	...	...	...	...	...	...	...
	1923	187	37	5.3	...	...	...	...	...	...
„ IV.—Bengal and Orissa	1913-22	1,558	54	34.5	25.0	0.19	0.4	0.06	0.2	0.06	
	1922	1,759	56	16.5	...	...	...	...	...	...
	1923	1,593	68	35.8	1.9	...	...	...	...	...
„ V.—Gangetic Plain and Cutch Nagpur.	1913-22	4,556	38	21.8	40.7	0.50	0.9	0.31	0.7	0.07	
	1922	5,326	31	8.3	14.3	0.19	...	...	...	...
	1923	5,906	27	16.1	0.3	...	...	...	0.2	0.17
„ VI.—Upper Sub-Himalaya	1913-22	12,309	46	17.9	38.0	1.64	0.6	0.36	0.7	0.11	
	1922	11,476	33	9.2	6.5	...	...	...	0.3	0.09
	1923	12,695	31	9.5	0.1	...	...	...	0.2	...
„ VII.—North West Frontier, Indus Valley and North West Rajputana.	1913-22	6,967	44	17.1	37.1	1.75	0.3	0.10	1.0	0.10	
	1922	9,498	33	12.1	14.6	...	...	...	0.2	0.12
	1923	8,522	32	14.1	8.6	0.12	...	...	0.6	0.23
„ VIII.—South-Eastern, Rajputana, Central India and Gujrat.	1913-22	4,853	38	20.1	34.0	1.23	0.1	0.04	1.1	0.19	
	1922	5,806	24	14.6	51.7	...	...	...	0.3	...
	1923	5,607	18	13.9	...	...	...	...	0.4	...
„ IX.—Deccan	1913-22	10,937	46	35.6	43.0	0.95	0.6	0.30	0.8	0.12	
	1922	9,625	31	11.0	3.7	...	0.1	0.10	0.8	0.42	
	1923	10,006	29	24.3	...	...	...	...	0.1	...
„ X.—Western Coast	1913-22	1,662	77	38.0	101.4	0.78	1.6	0.60	1.3	0.36	
	1922	1,083	45	32.3	...	...	...	...	...	...
	1923	1,123	35	15.1	...	...	...	...	0.9	...
„ XI.—Southern India	1913-22	3,640	40	26.4	33.0	2.06	0.2	0.08	1.0	0.19	
	1922	2,254	37	7.5	18.2	...	...	...	2.7	0.89
	1923	2,976	31	18.5	0.7	...	...	...	0.3	...
„ XII (a).—Hill Stations	1913-22	9,204	37	15.7	31.9	1.24	0.1	0.03	0.2	0.05	
	1922	8,655	26	7.9	11.0	...	...	...	0.2	0.12
	1923	8,923	21	9.7	2.7	...	...	...	...	...
XII (b).—Hill Convalescent Depot and Sanatoria.	1913-22	3,198	51	19.8	32.4	1.31	0.2	0.03	0.3	0.06	
	1922	2,402	36	25.4	6.2	...	...	...	0.4	0.42
	1923	2,485	31	25.3	1.6	...	...	...	...	...
India	1913-22	63,851	45	22.8	38.0	1.25	0.4	0.19	0.7	0.11	
	1922	60,166	32	11.9	9.6	0.02	0.0	0.02	0.4	0.17	
	1923	63,139	28	15.5	1.8	0.02	...	...	0.2	0.05

EUROPEAN TROOPS.

OF STRENGTH.

ADMISSIONS.

DEATHS

Enterica.		Malaria.		Pyrexia of Uncertain Origin.		Lobar Pneumonia		Dysentery.		Venereal Diseases.		All causes.	
A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
0.7	0.09	99.5	0.18	7.7	...	1.7	0.18	8.8	0.27	115.3	0.18	863.9	5.05
0.9	...	26.4	...	...	...	...	...	...	...	131.1	...	600.2	1.82
1.0	...	15.3	0.96	...	...	1.0	...	11.5	...	98.8	...	622.8	2.8
1.4	0.14	86.4	1.09	5.2	...	1.9	0.14	6.6	0.81	117.5	...	726.5	6.11
...	...	87.2	...	...	...	...	...	...	...	271.8	...	1030.8	5.13
...	...	123.0	...	...	...	...	...	5.3	...	256.7	...	1080.2	...
1.7	0.19	139.9	0.64	6.8	...	4.0	0.58	12.2	0.58	156.6	0.06	960.3	8.60
1.1	...	100.1	1.14	...	...	12.5	2.27	26.2	...	1.3.9	...	921.5	3.98
1.3	...	167.0	0.68	...	...	5.0	0.63	22.6	...	194.0	...	1048.3	5.65
5.5	0.46	102.0	0.15	14.8	0.04	3.6	0.59	9.1	0.31	64.0	0.03	779.6	6.83
4.3	0.38	205.2	0.38	0.6	...	3.2	...	14.5	0.19	77.2	...	695.1	4.88
2.9	...	76.5	0.17	1.7	...	1.7	...	14.0	...	37.6	...	608.2	4.40
4.7	0.73	242.2	0.63	5.8	0.03	4.4	0.54	6.5	0.12	60.0	0.02	942.7	9.12
4.0	0.52	148.7	0.93	0.3	...	4.6	0.96	6.4	...	86.8	...	596.7	6.45
2.6	1.08	322.5	0.16	0.1	...	4.6	0.39	9.5	0.24	73.6	0.08	679.3	3.54
4.4	0.40	378.8	1.02	7.1	0.04	4.6	0.86	4.2	0.13	47.1	0.04	1104.2	9.36
2.2	0.47	399.5	6.71	0.4	...	2.1	0.47	7.5	...	57.8	...	922.7	5.53
1.9	0.12	1352.5	0.59	0.2	...	4.1	0.12	6.8	0.12	59.0	...	853.2	3.99
4.6	0.62	177.5	0.19	5.0	0.02	3.1	0.37	7.7	0.06	59.9	0.02	783.3	6.45
4.1	0.34	146.2	...	1.2	...	2.9	0.17	6.0	...	71.1	...	479.1	2.93
2.3	0.18	93.3	0.89	0.5	...	4.1	0.18	6.2	...	50.5	...	362.9	3.39
4.1	0.34	180.1	0.27	1.5	...	1.8	0.27	14.8	0.13	73.2	0.02	748.7	5.20
2.8	0.31	80.2	0.10	...	...	1.5	...	13.5	0.21	92.1	0.10	494.9	5.30
1.6	0.30	91.9	0.20	0.8	...	1.9	0.10	20.1	0.20	76.6	...	425.9	4.26
4.3	0.36	351.9	1.20	6.4	...	7.0	1.08	20.0	0.90	178.5	...	1375.8	11.55
0.9	0.92	361.0	0.52	...	...	0.9	0.92	13.8	0.92	132.8	...	945.5	5.54
0.9	...	127.3	...	...	...	1.8	...	30.3	0.89	176.3	...	795.2	5.34
8.1	0.30	87.4	0.19	1.5	...	2.1	0.30	27.7	0.27	109.1	0.08	658.4	6.13
1.8	...	36.8	...	...	...	3.1	0.44	17.3	...	166.8	...	533.4	4.44
5.7	1.00	46.7	...	0.3	0.34	8.0	...	13.1	...	139.1	...	546.0	4.70
2.9	0.18	186.5	0.23	3.4	0.01	2.8	0.39	4.3	0.09	45.5	0.07	664.1	4.73
3.0	0.53	164.8	0.12	0.1	...	2.2	0.12	6.7	...	63.9	...	531.4	2.77
1.9	0.22	79.5	...	...	...	2.4	0.22	18.7	...	53.7	...	439.3	2.24
4.4	0.56	21	0.31	4.8	...	5.0	0.50	13.1	0.41	39.1	0.08	713.8	8.25
2.1	0.83	1.6	0.43	...	...	6.7	...	12.5	0.42	52.4	...	544.1	6.66
4.0	0.40	167.0	...	...	...	2.8	0.40	14.5	0.40	43.1	0.40	539.2	4.02
4.2	0.42	205.1	0.45	5.2	0.02	3.4	0.49	9.8	0.21	68.3	0.05	829.9	7.03
3.0	0.42	175.4	0.43	0.7	...	3.2	0.40	9.5	0.08	84.7	0.01	628.9	4.73
2.3	0.19	172.2	0.27	0.6	0.02	3.1	0.19	13.2	0.13	71.3	0.03	595.4	3.75

APPENDIX TO SECTION I.—EUROPEAN TROOPS—*concl'd.*

B.—Admission and death rates from Enteric Group of Fevers in stations of over 1,000 strength.

Stations.	1923.		DECENNIMUM 1913-22.		Stations.	1923.		DECENNIMUM 1913-22.	
	Admission ratio per 1,000.	Death ratio per 1,000.	Admission ratio per 1,000.	Death ratio per 1,000.		Admission ratio per 1,000.	Death ratio per 1,000.	Admission ratio per 1,000.	Death ratio per 1,000.
Peshawar	1.4	...	6.2	0.51	Karachi	0.8	...	1.8	0.32
Nowshera	6.4	...	4.1	0.60	Jhansi	0.9	0.87	6.4	1.16
Rawalpindi	1.2	...	5.4	0.65	Mhow	5.0	...	5.5	0.30
Sialkot	3.2	...	5.6	1.05	Jubbulpore . . . . .	...	...	2.4	0.47
Lahore	0.8	...	6.8	1.25	Poona	1.3	0.87	8.7	0.40
Meerut	3.8	0.48	5.3	0.55	Secunderabad	0.7	...	1.9	0.35
Delhi . . . . .	...	...	5.4	1.27	Bangalore	4.4	0.49	9.1	0.33
Ranikhet . . . . .	...	...	3.8	0.10	Chakrata	1.0	...	2.3	0.25
Lucknow	1.7	...	6.1	0.51	Quetta	2.7	0.77	3.4	0.20
Calcutta	0.9	...	0.6	0.20	Aden	0.9	...	Not available.	

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Year.	" C " OFFICERS.				" D " WOMEN.				" E " CHILDREN.			
	Average Annual Strength.	Admission rate per 1,000.	Constantly Sick rate per 1,000.	Death per 1,000.	Average Annual Strength.	Admission rate per 1,000.	Constantly Sick rate per 1,000.	Death rate per 1,000.	Average Annual Strength.	Admission rate per 1,000.	Constantly Sick rate per 1,000.	Death rate per 1,000.
1913—1922	2,948	870.6	35.45	8.28	3,105	464.3	17.79	8.44	4,574	353.7	12.87	22.96
1922	3,078	611.4	23.86	5.52	6,152	400.7	13.51	6.34	7,514	284.3	7.86	19.98
1923	2,788	597.2	22.42	5.38	5,762	445.9	14.94	5.21	7,845	315.0	9.35	17.03

Appendix to Section II.
INDIAN TROOPS.

APPENDIX TO SECTION II.—INDIAN TROOPS.

A.—Armies and Districts.	Year.	Average Strength.	RATIO PER MILLE OF STRENGTH.												
			Admissions into Hospi- tal.	Constantly sick.	DEATHS FROM										Mortality including absent deaths.
					Cholera.	Small-pox.	Enteric Group of fevers.	Malaria.	Pulmonary tube- culosis.	Lobar pneumonia.	Dysentery.	Abscess of the liver.	All causes.		
Northern Command	1922	56,617	420.5	18.41	0.07	...	0.05	0.30	0.26	2.05	0.09	0.02	5.35	...	
	1923	44,802	465.4	16.81	...	...	0.02	0.40	0.27	1.67	0.09	...	4.78	...
Western Command	1922	20,626	525.8	27.86	...	...	0.34	0.19	0.87	2.86	0.44	...	9.31	...
	1923	18,806	350.7	16.23	...	...	0.11	0.16	0.05	1.75	0.16	...	4.84	...
Eastern Command	1922	22,940	497.8	24.45	0.04	0.04	0.04	0.09	0.48	0.74	0.22	...	3.71	...	
	1923	22,264	408.7	17.05	...	...	0.13	0.16	0.13	0.90	0.13	...	3.14	...
Southern Command	1922	20,030	500.2	28.32	...	...	0.10	0.35	0.35	1.00	0.15	...	5.14	...
	1923	19,642	477.2	21.73	0.05	...	...	0.10	0.10	0.51	...	...	3.26	...
Peshawar District	1922	17,662	468.8	18.27	0.23	...	0.11	0.34	0.23	2.04	0.11	...	5.32	...	
	1923	16,419	384.2	14.31	...	...	...	0.12	0.30	2.19	0.06	...	5.24	...
* Kohat "	1922	13,140	395.3	16.55	...	...	0.08	0.61	0.08	2.66	0.15	...	6.54	...
	1923	4,189	416.8	14.01	...	...	...	0.72	0.24	2.39	...	...	4.77	...
Rawalpindi "	1922	11,305	398.5	19.09	...	...	...	0.18	0.35	1.68	...	0.09	5.13	...
	1923	10,404	496.2	18.96	...	...	0.10	1.06	0.29	1.54	0.10	...	5.96	...
Lahore "	1922	14,510	401.6	19.73	...	...	...	0.07	0.41	1.79	0.07	...	4.48	...
	1923	13,790	553.5	19.01	...	...	...	0.15	0.22	0.94	0.15	...	3.34	...
Baluchistan "	1922	14,330	596.0	31.71	...	...	0.14	0.23	1.05	4.05	0.63	...	11.86	...
	1923	13,186	362.1	17.50	...	...	0.15	0.15	...	2.20	0.23	...	5.31	...

Sind Rajputana District	1922	5,296	366.1	17.45	...	...	0.79	...	0.48	0.16	...	...	3.49	...
	1923	5,620	324.0	13.26	...	...	...	0.18	0.18	0.71	...	...	8.74	...
United Provinces District	1922	15,680	485.8	24.96	...	0.06	...	0.06	0.51	0.77	0.19	...	3.44	...
	1923	15,273	397.6	17.12	...	...	0.13	0.20	0.13	0.92	0.07	...	2.88	...
Delhi Brigade	1922	2,937	500.5	18.76	...	...	...	0.34	0.68	1.02	0.34	...	4.77	...
	1923	2,350	377.4	15.26	...	...	...	0.43	...	...	0.85	...	2.98	...
Allahabad Brigade	1922	2,766	487.3	22.36	...	...	0.36	...	0.36	0.36	0.36	...	3.98	...
	1923	2,613	347.1	14.39	...	...	...	...	...	2.30	...	...	4.21	...
Presidency and Assam District	1922	1,557	632.6	33.81	0.64	...	...	...	...	0.64	...	0.64	3.85	...
	1923	2,028	607.5	22.02	...	...	0.49	...	0.40	...	...	...	3.94	...
Central Provinces District	1922	5,317	463.0	21.30	...	...	0.19	0.56	0.19	1.50	0.19	...	4.69	...
	1923	5,062	493.7	20.45	...	...	...	0.40	...	0.59	...	...	3.16	...
Poona District	1922	7,169	513.9	29.08	...	...	...	0.42	0.28	0.56	0.14	...	4.32	...
	1923	7,929	434.1	20.83	...	...	...	...	0.25	0.63	...	...	4.04	...
Bombay "	1922	2,059	733.9	43.97	...	...	...	...	1.46	0.97	0.49	...	7.29	...
	1923	1,776	680.7	32.78	0.56	...	...	...	...	...	...	...	3.38	...
Madras "	1922	5,485	430.8	28.22	...	...	0.18	0.18	0.18	1.09	...	...	5.65	...
	1923	4,675	456.2	20.50	...	...	...	...	...	0.41	...	...	2.05	...
Burma Independent District	1922	5,035	687.8	33.94	...	...	...	0.40	0.40	0.99	...	...	5.16	...
	1923	4,814	766.5	36.08	...	...	...	0.21	0.62	1.45	...	...	9.14	...
* Waziristan District	1922	18,777	754.2	31.46	...	...	0.11	2.32	0.43	3.14	0.21	0.16	15.55	...
	1923	27,459	497.9	29.84	...	...	0.04	2.44	0.26	3.79	0.29	...	12.42	...
Army of India	1922	147,840	624.0	24.61	0.03	0.01	0.10	0.58	0.42	1.88	0.18	0.03	6.86	6.86
	1923	143,234	466.7	20.63	0.01	...	0.05	0.69	0.20	1.77	0.13	...	5.98	5.98

* The following stations:—Dardoni, Idak, Saidgi and Bann transferred from Kohat District to Waziristan District during 1923.

APPENDIX TO SECTION II.—

B—GROUPS.	Years.	Average strength.	Constantly sick.	Invalids.	RATIO PER MILLE					
					Influenza.		Cholera.		Small-pox.	
					A.	D.	A.	D.	A.	D.
					A—		D—			
Group I.—Burma Coast and Bay Island.	1913-22	1,478	31.32	...	7.4	...	0.1	0.07	0.2	...
	1922	1,133	72.28	...	...	...	...	...	...	...
	1923	1,108	85.13	...	...	...	...	...	...	...
" II.—Burma Inland . . .	1913-22	3,010	38.37	...	25.5	1.96	0.1	0.07	0.3	...
	1922	1,982	37.51	...	6.1	...	...	...	0.5	...
	1923	1,739	32.82	...	...	...	...	...	...	...
" III.—Assam	1913-22	363	27.54	...	4.4	...	...	...	0.3	...
	1922	...	...	...	...	...	...	...	...	...
	1923	...	...	...	...	...	...	...	...	...
" IV.—Bengal and Orissa . . .	1913-22	8,447	32.04	...	38.0	5.15	1.1	0.45	0.2	...
	1922	1,060	40.58	...	40.6	...	10.4	0.34	...	...
	1923	954	24.28	...	...	...	1.0	...	...	...
" V.—Gangetic Plain and Chutia Nagpur.	1913-22	9,970	20.64	...	36.0	3.05	0.6	0.35	0.5	0.02
	1922	6,509	25.81	...	0.3	...	...	...	0.3	0.15
	1923	6,546	17.05	...	0.2	...	...	...	0.2	...
" VI.—Upper Sub-Himalayas . . .	1913-22	42,317	35.46	...	28.9	3.71	0.5	0.21	0.8	0.63
	1922	29,408	21.05	...	4.2	0.07	...	...	0.1	...
	1923	26,975	19.28	...	2.2	...	...	...	0.1	...
" VII.—North-West Frontier, Indus Valley and North-Western Rajputana.	1913-22	38,953	36.02	...	29.2	3.00	0.5	0.25	0.5	0.04
	1922	49,432	19.00	...	5.3	0.02	0.2	0.08	0.0	...
	1923	47,142	13.24	...	3.7	0.25	...	...	0.0	...
" VIII.—South-Eastern Rajputana, Central India and Gujrat.	1913-22	15,358	30.39	...	50.4	4.25	0.4	0.21	0.7	0.03
	1922	7,390	17.99	...	6.0	...	0.1	...	0.3	...
	1923	7,383	14.22	...	10.0	...	...	...	0.3	...
" IX.—Deccan	1913-22	22,256	38.38	...	37.2	4.50	0.3	0.20	0.8	0.06
	1922	3,332	27.93	...	5.3	...	...	...	0.1	...
	1923	10,443	20.78	...	4.4	...	...	...	0.2	...
" X.—Western Coast	1913-22	2,872	57.20	...	69.9	4.04	0.5	0.14	1.3	0.03
	1922	3,194	35.01	...	...	...	...	...	...	...
	1923	2,572	27.89	...	3.9	...	0.4	0.39	0.4	...
" XI.—Southern India	1913-22	6,050	34.89	...	50.6	3.54	0.6	0.28	2.9	0.56
	1922	4,270	30.60	...	4.0	0.23	...	...	1.9	...
	1923	3,986	21.12	...	3.8	...	...	...	...	...
" XII.—Hill Stations	1913-22	29,620	36.09	...	43.2	3.66	0.2	0.17	0.3	0.07
	1922	30,315	32.53	...	7.0	0.16	...	...	0.1	...
	1923	28,939	26.97	...	2.8	0.10	0.0	...	0.1	...
Army of India	1913-22	181,775	34.84	20.1	35.8	3.47	0.4	0.22	0.7	0.06
	1922	147,840	24.61	18.0	5.6	0.07	0.1	0.08	0.1	0.01
	1923	143,234	20.63	16.3	3.2	0.10	0.0	0.01	0.1	...

INDIAN TROOPS—contd.

OF STRENGTH.

 ADMISSIONS } FROM
 DEATHS }

Enteric group of fevers.		Malaria.		Pyrexia of uncertain origin.		Lobar pneumonia.		Dysentery.		Venereal diseases.		All causes.	
A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
...	...	150.5	1.69	35.1	0.07	16.7	3.85	9.1	0.20	61.4	0.07	724.0	9.54
...	...	37.1	...	...	...	7.1	0.88	12.4	...	41.5	...	531.3	4.41
0.9	...	39.7	...	0.9	...	5.4	...	13.5	...	52.3	...	458.5	2.71
0.5	0.33	146.7	1.30	8.6	0.10	6.9	1.73	13.0	0.30	122.9	0.07	735.0	10.33
...	...	101.4	1.01	...	...	2.0	...	0.5	...	159.9	0.50	814.3	4.54
...	...	164.5	...	...	...	2.3	0.58	18.4	...	148.9	...	792.4	7.48
1.1	0.28	158.1	0.28	73.3	...	5.8	0.28	36.9	...	19.3	...	732.0	1.65
...
...
0.6	0.08	109.5	0.65	19.7	...	8.0	1.31	15.7	0.08	50.4	...	791.5	11.20
0.9	...	99.1	...	...	...	2.8	...	13.2	...	83.0	...	717.0	2.83
2.1	...	224.3	...	...	...	10.5	...	18.9	...	29.3	...	764.1	4.19
0.7	0.15	82.0	0.28	6.9	0.04	11.4	2.28	7.7	0.18	48.0	0.07	602.0	9.62
0.9	0.15	157.6	...	0.2	0.15	5.8	0.25	12.1	0.31	37.6	...	513.3	3.53
0.9	...	88.9	...	0.2	0.15	7.2	1.2	10.8	...	25.7	...	415.5	2.75
0.9	0.17	120.0	0.56	12.2	0.10	16.7	4.04	12.1	0.19	47.9	0.05	670.2	19.57
0.8	...	125.1	0.10	0.2	0.03	7.8	1.43	9.9	0.14	36.1	...	424.9	4.56
1.3	0.11	230.4	0.52	0.1	...	7.9	0.82	10.2	0.11	29.7	...	502.6	3.78
1.6	0.37	276.1	0.92	8.8	0.08	17.8	4.29	18.3	0.16	27.4	0.03	850.9	13.94
0.8	0.08	222.8	0.87	0.1	0.02	11.1	2.49	5.3	0.14	18.0	...	526.3	8.09
0.3	0.02	161.0	1.06	0.1	...	13.7	3.01	4.5	0.11	12.6	...	443.3	7.85
1.0	0.21	126.0	0.56	3.5	0.07	12.3	2.70	6.9	0.11	30.4	0.03	659.0	12.73
1.5	0.68	108.0	0.27	...	0.14	6.9	1.08	3.7	...	29.4	...	372.4	4.60
0.7	...	78.6	0.27	0.3	...	6.9	0.54	3.8	0.14	20.7	...	350.1	3.32
0.8	0.14	101.5	0.42	2.6	0.02	10.2	2.48	16.8	0.31	68.4	0.07	736.4	12.67
0.4	0.11	100.8	0.54	0.1	...	6.8	0.64	10.0	0.21	63.2	...	580.3	4.71
0.1	...	107.2	0.19	...	...	3.2	0.67	16.9	...	50.2	...	463.5	4.02
1.0	0.21	171.9	0.38	17.3	0.03	11.2	2.02	30.0	0.20	129.9	...	959.1	11.87
0.3	...	115.8	...	...	...	6.3	1.25	8.1	0.31	27.6	...	574.8	5.95
1.2	...	126.0	...	...	...	3.5	...	13.6	...	20.2	...	591.0	3.11
0.8	0.12	70.7	0.36	0.4	...	5.5	1.09	5.9	0.10	85.9	0.02	626.1	10.58
0.7	0.23	37.5	...	...	...	3.0	0.94	6.8	...	76.6	...	463.5	6.09
...	...	89.8	...	1.0	...	2.3	0.50	4.3	...	53.9	...	463.1	2.01
1.3	0.31	105.1	0.95	10.6	0.07	14.6	3.68	9.6	0.20	28.5	0.03	715.8	14.50
0.5	0.10	181.0	0.99	0.6	...	12.3	2.87	13.2	0.33	29.7	...	575.0	10.03
0.3	0.10	130.9	0.93	0.0	...	10.3	2.18	7.9	0.31	18.4	...	438.9	8.05
1.1	0.23	162.7	0.67	9.4	0.07	13.9	3.28	13.2	0.20	44.0	0.04	719.3	12.75
0.7	0.10	173.9	0.58	0.2	0.03	9.3	1.88	8.5	0.18	32.7	0.03	524.0	6.86
0.5	0.05	158.1	0.69	0.2	0.01	9.5	1.77	7.3	0.13	24.0	...	466.7	5.98

APPENDIX TO SECTION II.—INDIAN TROOPS—contd.
1. Actuals. 2. Ratios.

C.—Plains and Hills.	Average annual strength.	Malaria.		Pulmonary tuberculosis.		Lobar pneumonia.		Other Respiratory diseases.		Dysentery and Diarrhoea.		Scurvy.		Anæmia.		All causes.		Average number constantly sick.	
		A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.		
1919	Plains	203,826	28,972	105	823	207	2,671	607	11,811	273	6,728	35	134	2	4,097	6	160,272	2,323	8,338
			142.1	0.52	4.0	1.02	13.1	2.98	57.9	1.34	33.0	0.17	0.7	0.01	20.1	0.03	786.3	11.40	40.91
	Hills	24,152	4,483	18	86	39	258	54	1,153	23	383	9	7	...	364	3	15,291	408	811
			183.5	0.75	3.6	1.61	10.7	2.24	47.7	1.16	15.9	0.37	0.3	...	15.1	0.12	633.1	16.89	33.58
	Hills above 5,000 feet sea level .	13,063	2,937	10	53	21	138	35	420	15	205	4	7	...	217	1	7,784	210	403
178.9			0.77	4.1	1.61	10.6	2.68	32.2	1.15	15.7	0.31	0.5	...	16.6	0.08	595.9	16.08	30.85	
Hills below 5,000 feet sea level .	11,089	2,096	8	33	18	120	19	733	13	178	5	...	...	147	2	7,507	198	408	
		189.0	0.72	3.0	1.62	10.8	1.71	66.1	1.17	16.1	0.45	...	...	13.3	0.18	677.0	17.86	36.79	
1920	Plains	177,374	35,688	78	737	161	2,055	392	9,205	237	4,070	15	86	2	2,127	9	136,336	1,522	7,551
			201.2	0.44	4.2	0.91	11.6	2.21	51.9	1.34	22.9	0.08	0.5	0.01	12.0	0.05	768.6	8.58	42.57
	Hills	26,840	8,633	22	185	70	473	147	2,345	95	463	12	12	...	310	2	27,482	594	1,655
			234.3	0.60	5.0	1.90	12.8	3.99	63.7	2.58	12.6	0.33	0.3	...	8.4	0.05	745.4	16.12	44.92
	Hills above 5,000 feet sea level .	17,260	3,428	7	99	31	260	91	742	23	186	4	2	...	145	...	12,006	274	779
198.6			0.41	5.7	1.80	15.1	5.27	43.0	1.33	10.8	0.23	0.1	...	8.4	...	695.6	15.87	45.13	
Hills below 5,000 feet sea level .	19,580	5,205	15	86	39	213	56	1,603	72	277	8	10	...	165	2	15,456	320	876	
		265.8	0.77	4.4	1.99	10.9	2.36	81.9	3.68	14.1	0.41	0.5	...	8.4	0.10	789.4	16.34	44.74	

1921	Plains	146,028	82,642	81	636	93	1,528	341	5,947	185	5,290	36	127	2	1,007	10	98,518	1,369	4,775
			223.5	0.55	3.7	0.64	10.5	2.34	40.7	1.27	36.2	0.25	0.9	0.01	6.9	0.07	674.6	9.37	32.70
	Hills	29,356	6,595	24	128	52	331	90	1,521	47	716	18	32	1	186	9	20,702	418	1,256
			224.6	0.82	4.3	1.77	11.2	3.07	51.8	1.60	24.4	0.61	1.1	0.03	6.3	0.31	705.2	14.07	42.80
	Hills above 5,000 feet sea level	15,971	2,400	6	78	19	211	52	735	19	341	7	20	...	98	...	10,066	198	562
			155.9	0.38	4.9	1.19	13.2	3.26	46.0	1.19	21.4	0.44	1.3	...	5.8	...	631.5	12.40	35.20
	Hills below 5,000 feet sea level	13,385	4,105	18	50	33	120	38	786	28	975	11	12	1	98	9	10,616	215	694
			306.7	1.34	3.7	2.47	9.0	2.84	58.7	2.09	28.0	0.82	0.9	0.07	6.9	0.07	798.1	16.06	51.86

1922	Plains	117,525	20,218	56	375	84	998	191	3,583	101	2,376	18	86	2	471	9	60,037	710	2,653
			172.0	0.48	3.2	0.29	8.5	1.68	33.0	0.36	22.8	0.15	0.3	0.02	4.0	0.08	510.8	6.04	22.57
	Hills	30,315	5,487	80	170	28	378	87	1,497	57	906	12	22	1	163	1	17,431	304	986
			181.0	0.99	5.6	0.92	12.3	2.87	49.4	1.88	28.9	0.40	0.7	0.03	5.4	0.30	575.0	10.08	32.52
	Hills above 5,000 feet sea level	18,566	3,181	2	36	10	172	46	704	23	424	3	19	1	60	3	7,778	117	429
			160.8	0.15	2.7	0.74	12.7	3.39	51.9	1.70	31.3	0.22	1.4	0.08	4.4	0.22	573.3	8.62	31.63
	Hills below 5,000 feet sea level	11,749	3,306	28	134	18	201	41	798	34	482	9	3	...	103	6	9,853	187	557
			197.4	1.67	8.0	1.07	12.0	2.45	47.3	2.03	28.8	0.54	0.2	...	6.1	0.36	573.3	11.16	33.23

1923	Plains	114,295	18,557	72	331	15	1,066	190	3,687	78	2,409	9	11	...	375	8	54,146	623	2,174
			165.0	0.63	2.9	0.13	9.3	1.6	32.3	0.68	21.1	0.08	0.1	...	3.3	0.07	473.7	5.45	19.02
	Hills	28,989	3,789	27	127	13	298	63	1,292	27	693	9	4	...	97	4	12,701	233	780
			180.9	0.93	4.4	0.45	10.3	2.18	44.6	0.93	20.5	0.31	0.1	...	3.4	0.14	438.9	8.05	26.97
	Hills above 5,000 feet sea level	11,621	1,239	...	35	2	112	21	409	4	281	3	1	...	14	1	4,620	54	213
			106.6	...	3.0	0.17	9.6	1.81	35.2	0.34	24.2	0.26	0.0	...	1.2	0.01	397.6	4.85	18.78
	Hills below 5,000 feet sea level	17,318	2,550	27	92	11	186	42	883	23	312	6	3	...	83	3	8,081	179	562
			147.2	1.56	5.3	0.64	10.7	2.43	51.0	1.33	18.0	0.35	0.2	...	4.8	0.17	486.6	10.84	32.47

APPENDIX TO SECTION II—INDIAN TROOPS—*concl'd.*

D.—Enteric Group of Fevers.	1913—1922.		1923.	
	Admission rate per 1,000.	Death rate per 1,000.	Admission rate per 1,000.	Death rate per 1,000.
European Troops	4.2	.42	2.8	.19
Indian Troops (including Gurkhas)	1.1	0.23	0.5	0.05
Gurkhas only	1.7	0.43	0.8	0.20
Prisoners	1.1	0.3	1.3	0.28

	E.—PULMONARY TUBERCULOSIS IN 1923.		F.—VENEREAL DISEASES IN 1923.
	Admission rate per 1,000.	Death rate per 1,000.	Admission rate per 1,000.
Indian Troops excluding Gurkhas	3.0	0.17	25.3
Gurkhas only	5.2	0.39	13.7

	G.—INFLUENZA.				H.—LOBAR PNEUMONIA.			
	1913—1922.		1923.		1913—1922.		1923.	
	Admission rate per 1,000.	Death rate per 1,000.	Admission rate per 1,000.	Death rate per 1,000.	Admission rate per 1,000.	Death rate per 1,000.	Admission rate per 1,000.	Death rate per 1,000.
European Troops	38.0	1.25	1.8	0.02	3.4	.49	3.1	0.19
Indian Troops	35.8	3.47	3.2	0.10	13.9	3.28	9.5	1.77
Prisoners	46.4	2.8	12.3	0.03	12.9	3.5	12.9	2.96

Appendix to Section III.

GENERAL POPULATION.

APPENDIX TO SECTION III.--

A.—Maximum, minimum and mean temperatures in shade and the departures from the

Station.	JANUARY.				FEBRUARY.				MARCH.			
	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.
Calcutta	78·0	54·7	66·4	-0·2	80·4	62·4	71·4	+0·1	90·3	67·8	79·0	-1·1
Narayanganj	78·2	55·3	66·7	+0·2	78·9	61·0	70·0	-0·3	90·3	66·4	78·3	-0·3
Chittagong	80·5	53·8	67·2	+0·3	80·6	60·6	70·6	+0·1	89·0	64·6	76·8	-0·3
Sibaagar	71·6	48·8	60·2	+0·3	71·7	55·5	63·6	+0·7	83·3	60·3	71·8	+2·6
Silchar	80·8	52·1	66·5	+1·3	79·0	56·7	67·8	-0·3	90·4	60·6	75·5	+1·0
Cuttack	81·0	54·5	67·7	-3·9	86·3	63·0	74·7	-2·3	94·1	67·3	80·7	-3·8
Patna	73·6	51·1	62·2	+0·5	76·6	57·1	66·9	+1·0	80·6	65·2	77·4	+0·7
Darjeeling	50·9	38·3	44·6	+3·4	48·4	36·4	42·4	-0·1	58·5	41·3	51·4	+2·0
Allahabad	75·3	47·5	61·4	+0·2	79·4	53·0	66·2	+0·5	93·4	62·1	77·7	+0·9
Lucknow	75·1	47·5	61·8	+0·9	77·0	52·5 (e)	64·8 (e)	+0·1	91·6	60·0 (f)	75·8 (f)	+0·3
Delhi	67·1	48·7	57·9	-1·1	70·3	52·7 (e)	61·4 (e)	-1·7	85·1	58·8	69·6	-0·8
Agra	72·0	47·9	60·0	-0·9	76·1	53·4	64·8	-0·3	90·5	62·8	76·6	+0·6
Jhansi	76·9	46·5	61·7	-1·8	80·6	52·8	66·7	-1·3	93·9	63·0	78·4	-0·5
Ajmer	73·2	45·5	59·4	-0·3	75·6	49·4	62·5	-1·1	89·5	60·1	74·8	+0·5
Saugor	77·4	52·2	64·8	+0·1	80·7	55·6	68·2	+0·1	92·3	66·1	79·2	+1·4
Jubbulpore	76·6	48·1	62·4	-0·7	80·4	52·9	66·6	-0·3	91·2	62·7	77·0	+0·8
Multan	68·5	45·4	56·9	...	71·4	49·7	60·6	-0·4	86·1	60·3	73·2	+1·3
Lahore	64·8	43·2	54·0	-1·0	66·9	48·1	57·5	-1·1	82·1	56·8	69·5	+0·5
Peshawar	60·8	38·8	49·8	+1·5	62·5	44·6	53·6	-0·7	74·7	51·9	63·3	+0·1
Chattrata	52·1	37·6	44·8	+1·3	48·7	35·4	42·1	-1·7	63·4	46·0	54·7	+2·9
Indore	81·0	50·7	65·9	+1·0	82·2	51·8	67·0	-0·7	94·0	61·4	77·7	+1·3
Deesa	85·5	51·9	68·7	+1·3	85·1	51·5	68·3	-2·1	99·6	63·8	81·7	+2·3
Karachi	76·2	57·1	66·7	-0·5	76·5	59·8	68·1	-1·2	83·0	67·6	75·3	+0·6
Bombay	84·4	68·9	76·6	+1·1	82·6	68·5	75·6	-0·2	88·0	75·0	81·5	+2·0
Belgaum	83·6	59·1	71·3	+0·7	84·8	56·9	70·9	-3·0	80·1	64·1	76·7	-2·1
Nagpur	83·9	55·0	69·4	-0·1	87·1	58·9	73·0	-1·1	93·3	67·8	80·6	-1·7
Bellary	87·0	62·0	74·5	-0·5	92·3	64·7	78·5	-1·6	95·7	71·1 (b)	83·5 (b)	-2·9
Bangalore	80·2	57·9	69·1	-0·1	85·9	60·4	73·2	-0·1	88·7	65·3	77·0	-0·9
Madras	81·6	68·7	75·1	-1·0	85·3	69·7	77·5	-0·3	88·5	73·3	80·2	-0·1
Rangoon	89·2	68·5	78·8	+2·1	89·9	66·9	78·4	-1·0	95·4	72·3	83·8	+0·3
Akyab	79·4	59·1	69·3	-0·9	82·1	62·4	72·3	-0·5	87·4	65·8	76·6	-1·9

(b) Mean of 30 days.

(e) Mean of 27 days.

(f) Mean of 20 days.

GENERAL POPULATION.

average of the mean temperature for each month at 31 stations in India during 1923.

APRIL.				MAY.				JUNE.			
Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.
°	°	°	°	°	°	°	°	°	°	°	°
94.9	77.0	85.9	+0.3	97.1	79.0	88.1	+1.9	95.5	89.5	88.0	+2.9
91.2	74.2	82.7	-0.3	91.4	76.2	83.8	+0.3	89.7	78.4	84.0	+0.5
88.7	73.7	81.2	+0.4	88.9	76.3	82.7	+0.5	87.5	77.2	82.3	+0.5
81.8	67.5	74.2	+0.7	82.3	72.1	77.2	-1.3	87.4	76.5 (c)	81.9 (c)	-0.5
88.0	69.4	78.7	+0.5	89.9	73.0	81.4	+0.8	87.0	75.2	81.0	-1.6
101.6	76.0	88.8	-0.7	104.7	80.0	92.4	+1.8	101.3	81.1	91.2	+3.7
98.4	75.4	86.9	+0.7	102.1	79.3	90.7	+2.0	100.2	81.6	90.8	+3.1
62.0	50.3	56.2	+0.7	64.1	53.7	58.9	+0.5	67.2	58.0	62.6	+1.3
104.9	73.3	89.1	+1.7	109.1	80.5	94.8	+1.7	110.0	86.7	98.3	+5.9
104.1	71.8	87.9	+1.9	108.6	79.1	93.8	+2.6	110.5	85.3	97.9	+6.4
99.3	74.9	87.0	+1.7	102.8	80.1	91.5	-0.7	107.0	86.7	96.8	+3.4
102.5	73.7	88.1	+1.1	106.4	80.6	93.5	-0.4	109.9	89.0	99.5	+4.0
104.8	75.2	90.0	+0.5	108.5	82.0	95.2	-0.7	110.6	89.2	99.9	+5.7
98.1	72.3	85.2	+0.3	101.3	79.1	90.2	-1.5	103.2	82.3	92.8	+1.6
100.8	74.6	87.7	+1.0	103.9	78.4	91.1	-0.7	104.7	82.7	93.7	+5.5
101.7	71.2	86.4	+0.9	104.9	78.0	91.4	-0.5	105.5	84.6	95.1	+0.7
97.9	70.7	84.3	+1.3	103.2	77.2	90.2	-2.3	109.6	85.7	97.7	+1.1
95.8	66.2	81.0	+0.9	99.9	72.9	86.4	-2.9	108.3	83.5	95.9	+2.1
89.5	61.5	75.5	+2.7	94.3	69.2	81.8	-2.5	105.7	77.9	93.3	+1.3
75.5	55.1	65.3	+5.1	79.0	57.6	68.3	+2.9	81.7 (d)	62.8	72.0 (d)	+5.2
100.7	69.5	85.1	+0.3	102.6	75.4	89.0	-0.5	101.8	78.4	90.1	+4.7
104.0	69.6	86.8	-0.7	106.4	76.4	91.4	-0.8	107.2	80.8	94.0	+2.7
85.3	73.6	79.4	+0.1	86.3	77.5	81.9	-1.9	87.8	79.5	83.7	-2.9
89.9	77.7	83.8	+0.7	90.9	80.6	85.7	-0.1	90.7	81.7	86.2	+2.3
95.9	65.7	80.8	-0.7	94.2	67.3	80.8	+0.1	85.8	69.0	77.4	+2.6
104.8	76.1	90.4	+0.2	108.4	83.0	95.7	+0.5	107.3	84.9	96.1	+7.1
104.1	77.3	90.7	+0.3	103.0	76.6	89.8	-0.1	99.9	77.3	88.6	+3.2
92.8	69.0	80.9	-0.5	93.1	68.4	80.7	+0.3	87.3	67.3	77.3	+1.4
93.9	77.9	85.9	+0.6	99.9	80.0	89.9	+0.1	102.6	82.2	92.4	+2.3
94.1	75.6	84.9	-2.2	89.2	77.3	83.2	-1.2	86.8	76.7	81.7	+0.3
90.2	74.6	82.4	-0.9	89.3	77.6	83.5	-0.7	87.7	77.1	82.4	+0.7

(c) Mean of 29 days.

(d) Mean of 23 days.

APPENDIX TO SECTION III--

A.—Maximum, minimum and mean temperatures in shade and the departures from the

Station.	JULY.				AUGUST.				SEPTEMBER.			
	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.
Calcutta	88·6	78·8	83·7	+0·1	87·1	78·4	82·8	-0·4	89·9	78·7	84·3	+1·1
Narayanganj	87·4	78·8	83·1	-0·5	86·2	78·1	82·1	-1·1	88·9	79·0	83·9	+0·4
Chittagong	85·7	76·5	81·1	-0·1	85·4	76·2	80·8	-0·3	88·2	76·2	82·2	+0·6
Sibsagar	87·1	78·1	82·6	-0·9	89·3	77·7	83·5	+0·4	85·4	76·7	81·1	-0·9
Silchar	90·9	76·7	83·5	+0·2	91·2	76·1	83·7	+0·5	89·1	75·4	82·3	-0·7
Cuttack	90·4	77·8	84·1	-0·2	88·3	77·1	82·7	-1·1	90·0	77·4	83·7	-0·4
Patna	90·5	80·3	85·4	+0·3	89·6	79·9	84·8	+0·5	90·6	79·6	85·2	+1·1
Darjeeling	66·5	58·6	62·6	+0·1	68·6	58·4	63·5	+1·5	65·7	56·5	61·1	+0·5
Allahabad	92·1	79·4	85·7	-0·5	89·9	78·4	84·1	-0·1	92·1	77·8	85·0	+0·7
Lucknow	93·9	79·6	86·7	+0·8	92·0	78·2	85·1	+0·5	91·6	76·4	84·0	-0·1
Delhi	95·7	79·8	87·8	-0·3	88·2	77·6	82·9	-3·2	90·9	75·9	83·4	-1·7
Agra	98·4	81·7	90·1	+2·1	90·3	78·5	84·4	-1·3	94·2	76·7	85·5	+0·1
Jhansi	97·1	80·1	88·6	+2·7	87·2	76·5	81·9	-1·5	91·6	75·7	83·7	-0·3
Ajmer	92·6	78·8	85·7	+0·7	83·5	74·6	79·1	-2·9	90·9	73·2	82·0	-0·3
Saugor	88·2	73·6	80·9	+0·9	80·8	71·7	76·2	-1·9	86·9	71·5	79·2	+0·2
Jubbulpore	87·3	75·3	81·3	+0·5	80·6	73·4	77·0	-2·3	86·6	74·4	80·5	+0·5
Multan	105·6	85·7	95·6	+1·3	98·6	83·2	90·9	-0·8	99·4	77·6	88·5	-0·5
Lahore	97·0	80·5	88·8	-1·9	92·7	79·6	86·2	-2·3	98·3	78·5	85·9	+0·1
Peshawar	105·6	79·4	92·5	+0·9	96·8	78·6	87·7	-1·1	95·8	70·4	82·9	-0·5
Chakrata	71·5	60·2	65·9	+0·7	69·8	60·2	65·0	+0·8	70·2	57·3	63·7	+0·7
Indore	85·1	73·1	79·1	+0·1	80·6	71·3	75·8	-1·1	85·4	70·7	78·0	+0·3
Deesa	97·5	79·4	88·4	+2·9	88·3	76·0	82·2	-0·5	99·7	75·8	87·5	+3·7
Karachi	86·2	79·1	82·7	-2·0	85·4	78·5	82·0	+0·1	87·0	78·0	81·5	+0·4
Bombay	83·8	77·4	80·6	-0·7	84·2	77·5	80·9	+0·1	85·0	76·8	80·9	-0·1
Belgaum	74·2	67·2	70·7	-0·9	74·8	67·1	70·9	-0·4	79·5	65·1	72·3	-0·1
Nagpur	87·1	74·8	80·9	-0·7	84·3	74·1	79·2	-1·5	88·2	73·7	81·0	-0·5
Bollary	89·2	74·3	81·8	-1·3	92·1	74·7	83·4	+1·1	92·5	73·2	82·8	+1·1
Bangalore	79·5	65·6	72·5	-1·5	81·6	65·5	73·6	-0·3	82·0	65·3	73·7	-0·8
Madras	98·9	79·9	89·4	+2·0	98·5	79·0	88·7	+2·8	94·2	76·8	85·5	+0·8
Rangoon	84·4	75·4	79·9	-0·7	84·4	75·5	80·0	-0·5	87·0	76·6	81·8	+0·9
Akyab	84·2	75·8	80·0	-0·8	81·8	75·0	78·4	-2·3	86·6	76·9	81·7	-0·1

(b) Mean of 39 days. (d) Mean of 28 days.

GENERAL POPULATION—contd.

average of the mean temperature for each month at 31 stations in India during 1923—contd.

OCTOBER.				NOVEMBER.				DECEMBER.			
Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.	Max.	Min.	Mean temp.	Dep.
°	°	°	°	°	°	°	°	°	°	°	°
87.6	73.6	80.6	-0.3	83.2	65.3	74.2	+0.8	78.5	57.2	67.8	+1.3
87.1	74.3	80.7	-0.9	84.0	67.5	75.7	+0.9	79.3	58.2	68.7	+1.2
85.7	71.9	78.8	-1.2	83.6	66.9	75.3	+0.9	78.6	57.5	68.0	+0.3
82.2	69.9	76.1	-1.3	79.0	60.2	69.6	+0.9	73.7	51.5	62.6	+1.7
86.8	70.1	78.5	-2.0	85.1	63.8	74.5	+0.2	80.1	53.6	66.9	-0.3
88.7	73.7	81.2	-1.1	81.7	66.0	73.9	-1.7	79.1	58.8	68.9	-0.9
88.5	71.6	80.1	-0.5	82.5	60.9	71.7	+0.3	75.6	54.6	65.1	+2.1
60.6	46.9	54.8	-1.1	56.0	43.4	49.7	+0.5	50.3	38.0	44.2	+1.1
90.2	66.1	78.2	-1.1	85.0	56.0	70.5	+1.1	76.8	50.7	63.7	+2.1
89.8	67.1	78.5	-3.0	83.8	55.5	69.7	+1.1	75.0	50.4	62.7	+1.7
88.3	67.6	78.0	-2.1	79.7	57.7	68.7	-0.7	69.6	50.3	59.9	-0.9
91.7	67.4	79.5	-1.3	84.0	56.7	70.4	-0.1	72.8	50.8	61.8	-0.4
90.8	64.6	77.7	-3.7	85.2	55.0	70.1	-1.9	77.9	50.1	64.0	-0.7
91.8	63.3	77.6	-0.7	82.9	50.7	66.8	-1.5	75.0	47.3	61.1	+0.1
88.6	64.3	76.4	-0.9	83.3	59.0	71.2	+0.9	79.2	54.2	66.6	+1.9
85.9	63.0	74.4	-1.5	82.2	52.6	67.9	+0.3	79.1	49.6	64.4	+2.5
93.7	66.7	80.2	-0.5	83.9	54.1	69.0	-0.1	72.7	46.1	59.4	+0.2
90.8	61.1	76.0	-1.7	81.0	47.9	64.5	-1.3	69.8	42.7	56.2	-0.5
84.4	57.6	71.0	-2.3	77.3	45.1	61.2	-0.2	67.7	40.3	54.0	+1.2
66.7	49.8	58.2	-0.7	62.2	44.2	53.2	+0.9	54.8	39.4	47.1	-0.2
88.8	6.9 (b)	75.4 (b)	-0.9	85.3	54.2	69.8	+0.3	82.5	53.6	68.0	+3.2
101.5	68.2	84.8	+2.7	93.4	57.6	75.5	+0.4	87.7	54.6	71.1	+2.1
85.5	72.5	79.0	-1.5	84.2	68.5	73.8	-1.9	76.5	55.9	67.2	-1.5
89.3	77.1	83.2	+0.8	86.4	72.4	79.4	-1.2	86.0	71.1	78.6	+1.2
85.5	65.7	75.6	+1.3	86.3	59.9	73.1	+1.1	84.0	60.0	72.0	+1.9
88.1	65.2	76.6	-2.8	86.0	59.5	72.8	-0.1	82.8	55.9	69.3	+1.4
93.2	71.1	82.1	+1.3	91.4	66.6	79.0	+2.1	87.8	62.3	75.1	+1.3
89.9	65.3	74.6	+0.9	84.9	62.5	73.7	+2.7	82.5	60.5	71.5	+2.8
90.0	75.2	82.6	+0.3	86.3	72.5	79.4	+0.5	83.3	71.2	77.3	+0.6
88.7	76.6	82.7	+0.9	89.6	75.9	82.8	+2.7	85.8	69.4	79.1	+1.9
86.4	74.7	80.5	-1.2	84.9	71.0	77.9	+0.1	79.9	62.7	71.3	-0.6

(v) Mean of 7 days.

APPENDIX TO SECTION III.—

B.—Monthly and annual rainfall and its departures from

Station.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Rain-fall.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.
Calcutta . . .	0·01	—0·33	3·67	+2·57	1·15	—0·29	0·82	—1·07	1·02	—4·73	5·37	—6·53
Varayanganj . . .	°	—0·80	2·17	+0·77	0·17	—2·52	11·65	+6·17	6·04	—1·37	6·48	—6·47
Shittagong . . .	°	—0·28	1·53	+0·50	°	—2·56	4·88	—0·59	5·97	—8·55	29·53	+8·74
Sibsagar . . .	°	—1·29	3·09	+1·08	0·74	—4·04	9·14	—0·97	16·76	+4·87	22·07	+7·86
Bilchar . . .	°	—0·81	1·59	—0·53	1·33	—6·58	17·05	+2·72	22·43	+6·84	32·71	+11·03
Cuttack . . .	°	—0·27	4·24	+3·48	0·03	—1·08	0·34	—0·81	2·33	—1·62	4·60	—5·48
Hazaribagh . . .	0·02	—0·70	3·36	+2·23	0·64	—0·40	0·17	—0·32	0·35	—1·96	5·08	—4·05
Patna . . .	°	—0·53	1·85	+1·14	0·07	—0·40	0·26	—0·04	0·11	—1·56	6·80	—1·52
Darjeeling . . .	°	—0·55	2·18	+1·08	1·41	—0·48	3·55	—0·30	6·32	—2·38	14·47	—9·79
Allahabad . . .	0·08	—0·73	0·61	+0·03	°	—0·31	°	—0·15	°	—0·84	0·34	—4·62
Lucknow . . .	°	—0·77	2·18	+1·53	°	—0·35	°	—0·26	°	—1·01	0·18	—4·29
Meerut . . .	0·45	—0·83	2·66	+1·78	°	—0·62	0·08	—0·40	0·36	—0·29	0·11	—0·32
Delhi . . .	0·30	—0·74	2·60	+1·84	0·03	—0·49	°	—0·39	0·32	—0·26	0·08	—2·93
Agra . . .	°	—0·54	0·56	+0·08	°	—0·35	°	—0·24	0·10	—0·37	0·05	—2·30
Jhansi . . .	0·03	—0·56	0·21	—0·24	0·04	—0·25	0·01	—0·14	0·05	—0·38	0·98	—3·32
Ajmer . . .	0·21	—0·15	°	—0·25	0·11	—0·08	°	—0·17	0·30	—0·30	°	—2·41
Saugor . . .	0·40	—0·19	0·10	—0·34	0·44	+0·09	0·04	—0·11	0·42	—0·08	0·89	—5·58
Jubbulpore . . .	0·07	—0·73	0·07	—0·75	0·40	—0·17	°	—0·25	0·03	—0·50	0·61	—6·71
Multan . . .	0·21	—0·21	0·58	+0·22	°	—0·43	0·39	+0·12	0·05	—0·30	°	—0·62
Lahore . . .	1·70	+0·65	1·52	+0·58	0·44	—0·42	1·55	+1·01	1·21	+0·51	°	—1·68
Peshawar . . .	1·19	—0·37	2·44	+1·09	1·92	—0·33	0·57	—1·28	1·54	+0·72	°	—0·36
Chakrata . . .	3·31	—1·04	7·19	+2·88	0·12	—2·94	0·25	—1·54	1·56	—0·38	3·49	—4·63
Indore . . .	°	—0·28	0·10	—0·08	0·22	+0·16	°	—0·14	°	—0·58	°	—5·70
Deesa . . .	°	—0·11	0·24	+0·08	°	—0·08	0·55	+0·52	0·02	—0·41	°	—2·18
Karachi . . .	0·36	—0·16	1·22	+0·83	°	—0·33	°	—0·17	0·01	—0·06	°	—0·86
Bombay . . .	°	—0·10	0·05	—0·03	°	—0·07	0·02	—0·03	°	—0·84	7·19	—11·12
Belgaum . . .	°	—0·13	0·08	+0·03	4·44	+4·17	0·98	—0·62	3·85	+1·39	1·24	—6·90
Nagpur . . .	°	—0·42	0·61	+0·01	1·73	+1·21	0·32	—0·24	0·03	—0·80	1·43	—7·53
Bellary . . .	°	—0·11	1·44	+1·28	0·41	+0·21	0·32	—0·44	1·85	—0·11	0·50	—1·37
Bangalore . . .	0·44	+0·18	0·01	—0·16	2·01	+1·51	3·00	+1·67	4·50	+0·14	1·98	—0·91
Madras . . .	4·46	+3·07	°	—0·32	0·64	+0·45	°	—0·53	0·03	—1·04	1·95	+0·06
Rangoon . . .	°	—0·21	°	—0·22	0·13	—0·19	8·18	+6·55	9·50	—2·48	27·37	+9·33
Akyab . . .	°	—0·06	°	—0·15	°	—0·49	1·09	—0·98	19·75	+5·80	43·39	—3·55

GENERAL POPULATION—contd.*the average at 23 stations in India during 1923.*

JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		ANNUAL.	
Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.	Rain.	Dep.
16.33	+3.82	16.66	+3.97	5.25	-4.62	5.33	+1.14	0.69	+0.03	0.20	°	56.50	-6.04
9.27	-3.71	15.01	+2.27	7.54	-2.09	1.57	-3.40	0.39	-0.59	0.05	-0.14	62.44	-11.38
30.32	+7.92	27.29	+7.99	21.52	+9.59	9.02	+2.14	6.34	+4.47	0.52	-0.18	136.92	+34.19
21.43	+4.42	12.53	-3.74	16.45	+4.75	4.44	0.66	0.67	-0.43	0.19	-0.33	107.51	+11.52
15.32	-4.42	16.83	-2.92	20.71	+6.30	10.54	+3.99	0.37	-1.03	0.02	-0.37	138.90	+14.22
11.77	+0.06	11.13	-2.53	7.77	-1.80	8.52	+3.32	7.75	+6.22	0.31	+0.03	58.79	-0.49
15.23	+2.82	24.67	+11.53	5.53	-3.65	1.12	-2.00	0.94	+0.57	0.12	-0.09	57.26	+3.98
10.26	-1.68	9.02	-4.53	3.02	-5.31	0.84	-1.70	°	-0.28	0.06	-0.03	32.09	-16.44
42.97	+10.66	14.74	-11.38	13.32	-5.06	2.14	-2.40	°	-0.78	°	-0.24	10.110	-21.57
9.88	-1.83	15.72	+4.02	7.02	+1.35	2.05	-0.27	0.03	-0.30	0.20	-0.03	35.88	-3.18
11.07	-0.38	15.42	+4.53	15.50	+8.43	3.32	+2.14	°	-0.19	1.18	+0.90	48.85	+10.23
10.67	+1.58	13.65	+4.96	3.46	-2.61	3.04	+2.48	0.06	-0.09	3.04	+2.63	37.53	+5.57
9.27	+1.74	13.91	+0.49	1.31	-3.47	0.36	+0.04	°	-0.11	3.04	+2.64	31.20	+4.36
4.72	-4.40	10.11	+1.96	8.84	+4.79	0.19	-0.57	0.01	-0.11	1.71	+1.44	26.29	-0.61
5.45	-6.12	15.36	+4.11	3.29	+2.37	0.43	-0.44	0.07	-0.10	0.73	+0.50	31.65	-4.52
5.73	-0.73	6.76	+0.01	0.19	-2.48	°	-0.33	°	-0.18	°	-0.28	13.30	-7.35
24.10	+10.16	25.50	+11.85	10.87	+3.93	1.40	+0.38	0.10	-0.36	0.72	+0.28	64.98	+20.03
20.81	+3.19	43.06	+26.20	6.06	-1.61	3.65	+1.84	°	-0.57	0.38	+0.09	75.14	+20.03
0.75	-1.27	3.87	+1.89	°	-0.41	0.02	-0.03	°	-0.07	0.03	-0.19	5.90	-1.30
3.80	-1.68	7.15	+1.82	°	-2.36	0.43	+0.18	°	-0.07	1.34	+0.98	19.14	-0.48
0.12	-1.12	5.63	+3.39	0.78	-0.03	0.63	+0.47	°	-0.28	0.15	-0.44	14.97	+1.46
10.96	-8.24	15.54	-3.15	6.39	-0.51	4.25	+3.29	0.28	-0.30	3.42	+2.14	56.76	-14.92
17.76	+7.89	8.95	+0.94	6.42	-0.11	°	-1.15	0.08	-0.33	0.04	-0.17	33.57	+0.45
8.87	-5.13	2.29	-6.33	°	-3.54	0.03	-0.38	°	-0.10	°	-0.04	7.00	-17.70
0.32	-2.62	3.66	+1.99	°	-0.42	°	-0.01	°	-0.04	°	-0.14	5.57	-1.99
43.26	+19.00	8.72	-5.08	18.32	+7.82	°	-2.16	°	-0.41	°	-0.05	77.56	+6.83
28.44	+12.29	14.09	+4.42	4.18	-0.70	0.43	-4.24	°	-1.74	°	-0.37	57.73	+7.60
20.72	+6.88	7.90	-3.74	12.91	+4.66	0.12	-1.98	°	-0.71	°	-0.54	45.77	-3.20
1.76	-0.09	0.44	-1.38	1.87	-3.21	1.46	-2.44	°	-2.19	°	-0.11	10.05	-10.48
4.38	+0.20	2.21	-3.17	6.84	-0.14	1.31	-4.59	0.01	-2.93	0.04	-0.44	26.73	-8.64
1.66	+2.28	3.30	-1.34	3.21	-1.78	15.89	+4.17	3.63	-10.62	2.56	-3.25	37.33	-18.41
28.69	+7.27	23.89	+4.02	12.31	-2.96	5.02	-1.89	5.20	+2.41	°	-0.37	120.29	+21.26
82.33	+27.53	88.06	+42.87	10.62	-11.95	13.87	+2.96	1.05	-4.43	1.66	+0.90	281.82	+58.46

APPENDIX TO SECTION III.—GENERAL POPULATION—*contd.**C.—Births.*

Province.	Population under registration.	RATIO OF BIRTHS PER 1,000 OF POPULATION.			Number of males born to every 100 females.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.
		Maximum for any one district.	Minimum for any one district.	Mean for the province.			
Delhi	500,539	...	...	42·07	111	4·17	...
Bengal	46,522,293	42·0	20·1	29·9	108	4·4	...
Bihar and Orissa	34,002,189	44·9	29·7	37·0	105	12·0	...
Assam	6,852,242	33·35	23·19	28·82	106	5·28	...
United Provinces of Agra and Oudh.	45,375,787	49·34	25·47	36·04	112·04	12·67	...
Punjab	20,517,606	50·1	24·5	43·2	112·2	12·3	...
North-West Frontier Province	2,135,573	36·9	23·6	27·6	126·4	3·9	...
Central Provinces and Berar .	13,912,760	53·63	38·35	45·63	105·05	15·10	...
Madras Presidency	41,002,696	43·7	21·1	33·1	104·1	10·9	...
Coorg	163,838	...	...	25·62	108·49	...	3·53
Bombay Presidency	19,165,614	51·70	17·71	108·52	9·95	...	...
Burma	10,822,618	40·20	17·91	29·51	106	9	...
Ajmer-Merwara	495,271	37·42	31·09	32·56	113·52	6·95	...

APPENDIX TO SECTION III—GENERAL POPULATION—*contd.**D.—Deaths.*

Province.	Population under registration.	Area in square miles.	Average population per square mile.	RATIO OF DEATHS PER 1,000 OF POPULATION.			DEATH RATE BY SEX.	
				Maximum for any one district.	Minimum for any one district.	Mean for the province.	Male.	Female.
Delhi	500,539	7.92*	31.165	...	...	37.90	33.12	44.44
Bengal	46,522,293	71,705	648	35.6	18.0	25.5	26.2	24.7
Bihar and Orissa	34,002,189	83,180	409	36.8	16.9	25.0	26.4	23.6
Assam	6,852,242	30,686	223	27.58	18.32	23.54	24.08	22.95
United Provinces of Agra and Oudh.	45,375,787	107,167	423	38.59	12.78	23.37	23.33	22.86
Punjab	20,517,606	97,280	211	55.4	17.7	30.9	29.4	32.9
North-West Frontier Province	2,135,573	13,215	168	26.6	20.9	23.7	24.0	23.4
Central Provinces and Berar	13,912,760	99,876	139	38.14	22.55	30.53	32.15	28.92
Madras Presidency	41,002,696	126,240	325	39.1	15.6	22.2	22.7	21.7
Coorg	163,838	1,582	104	...	...	29.14	27.68	30.91
Bombay Presidency	19,165,614	122,578	156	36.58	10.08	25.89	25.70	26.11
Burma	10,822,618	115,060	94	37.45	15.37	20.87	21.55	20.16
Ajmer-Merwara	495,271	2,711	183	25.85	24.90	25.62	25.42	25.87

* Delhi municipal town.

APPENDIX TO SECTION III.—GENERAL POPULATION—*contd.*

E.—Total number of deaths by months.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	Ratio per 1,000 of population.	
														1923.	1922.
Delhi	944	1,139	2,296	3,058	2,109	1,700	946	1,019	1,529	1,634	1,265	1,331	18,970	37.90	24.91
Bengal	124,834	85,868	90,000	101,959	87,840	70,407	77,152	72,205	81,709	112,454	118,365	163,003	1,185,791	25.5	25.2
Bihar and Orissa	67,900	54,422	66,741	68,249	71,431	70,432	65,479	72,726	78,675	82,032	71,272	82,393	851,752	25.0	24.1
Assam	15,521	11,458	11,825	12,063	13,409	13,701	14,075	12,727	12,187	13,554	14,559	16,253	161,332	23.54	26.85
United Provinces of Agra and Oudh.	89,147	82,076	91,886	82,782	84,987	95,717	78,793	76,207	88,691	102,333	93,570	94,115	1,060,304	23.37	25.01
Punjab	39,647	32,677	38,911	49,279	61,888	51,530	38,408	36,280	54,587	82,340	74,606	74,709	634,862	30.9	22.07
North-West Frontier Province.	4,676	3,725	3,659	3,103	3,185	4,051	2,654	2,650	3,294	4,889	6,226	8,601	50,713	23.74	21.68
Central Provinces and Berar.	32,633	27,728	32,469	32,619	39,742	41,504	24,924	32,760	39,497	48,127	38,718	34,068	424,789	30.53	29.31
Madras Presidency	93,469	74,311	72,231	67,181	67,456	68,524	70,717	78,488	71,714	74,054	80,813	89,867	908,825	22.2	21.0
Coorg	378	314	310	338	420	603	520	397	399	322	321	453	4,775	29.14	34.60
Bombay Presidency	44,151	39,752	46,405	42,681	40,600	32,659	38,465	42,727	44,913	46,724	41,804	40,363	496,244	25.89	23.61
Burma	22,966	18,613	18,207	16,953	16,805	18,768	19,418	20,371	17,860	16,972	16,741	22,189	225,383	20.87	22.23
Ajmer-Merwara	634	999	1,378	1,414	1,370	1,062	685	785	1,196	994	1,022	952	12,691	25.62	22.19
TOTAL	537,100	433,077	476,318	481,879	431,242	470,658	427,286	449,342	486,271	596,439	569,282	628,297	6,036,931	25.00	24.02

APPENDIX TO SECTION III.—GENERAL POPULATION—*contd.*

F.—Ratio of deaths from all causes according to months.

Province.	ANNUAL* DEATH RATE PER MILLE FOR THE MONTH OF												Ratio for the year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Delhi	22-21	29-66	54-01	74-33	49-61	41-32	22-25	23-97	37-17	38-44	30-75	31-31	37-90
Bengal	31-59	24-06	22-78	26-66	22-23	18-41	19-53	13-27	21-38	28-46	30-96	41-25	25-5
Bihar and Orissa	23-51	20-86	23-11	24-42	24-73	25-22	22-67	25-18	28-15	28-46	25-50	28-53	25-0
Assam	26-67	21-79	20-32	21-42	23-04	24-33	24-19	21-87	21-64	23-22	25-85	27-93	23-54
United Provinces of Agra and Oudh.	23-13	23-58	23-84	22-20	22-05	25-66	20-45	19-77	23-78	26-55	25-09	24-42	23-37
Punjab	22-75	20-76	22-33	29-22	35-51	30-57	22-04	20-82	32-37	47-25	44-24	42-37	30-9
North-West Frontier Province	25-78	22-74	20-17	17-68	17-56	23-08	14-83	14-61	18-77	26-95	35-47	47-42	23-74
Central Provinces and Berar	27-62	25-98	27-48	28-58	33-64	36-30	21-09	27-72	34-54	40-73	33-86	28-83	30-53
Madras Presidency	26-84	23-63	30-74	19-93	19-37	20-33	20-31	22-54	20-47	21-27	23-98	25-81	22-2
Coorg	27-16	24-98	22-23	25-10	30-18	44-78	37-37	28-53	29-63	23-14	23-84	32-55	29-14
Bombay Presidency	27-12	27-04	28-51	27-09	24-94	20-92	20-55	26-25	28-51	28-74	26-54	24-80	25-89
Burma	24-99	22-42	19-81	19-06	18-28	21-22	21-13	22-16	20-10	18-46	18-82	24-14	20-87
Ajmer-Merwara	19-83	26-29	32-76	34-74	32-67	26-09	16-28	18-66	29-38	23-63	25-11	22-63	25-62
India	26-19	23-23	23-23	24-27	23-95	23-72	20-33	21-91	24-50	29-08	28-18	30-64	25-00

* The ratios in the Statement have been calculated with reference to the number of days in each month.

APPENDIX TO SECTION III.—GENERAL POPULATION—contd.

G.—Deaths according to age.

Province.	RATIO PER 1,000 OF POPULATION.																			
	UNDER ONE YEAR.*		1-5 YEARS.		5-10 YEARS.		10-15 YEARS.		15-20 YEARS.		20-30 YEARS.		30-40 YEARS.		40-50 YEARS.		50-60 YEARS.		60 YEARS AND UPWARDS.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Delhi	220.23	204.64	Not available				Not available				Not available				Not available					
Bengal	187.3	176.5	35.5	33.3	14.7	12.4	11.4	10.3	15.2	16.6	15.5	17.4	18.0	17.8	22.9	20.1	35.2	30.5	69.7	57.5
Bihar and Orissa	155.66	136.99	53.8	46.0	11.6	10.5	9.4	8.1	10.7	10.8	14.1	12.9	16.3	14.0	20.7	16.6	35.6	31.3	65.6	55.6
Assam	190.13	168.19	31.80	28.78	11.67	9.59	8.07	8.27	11.87	14.09	13.61	17.06	17.03	18.18	23.77	10.19	34.58	29.08	66.29	63.15
United Provinces of Agra and Oudh	174.24	163.93	43.69	38.31	8.87	8.99	7.48	8.52	8.30	10.16	10.53	11.63	13.19	13.00	18.79	15.54	31.52	28.84	61.80	50.69
Punjab	198.43	194.59	53.87	59.39	11.23	13.11	10.24	14.25	11.09	16.61	11.58	14.94	13.57	17.20	20.08	21.89	28.03	29.45	61.08	68.65
North-West Frontier Provinces	163.55	144.35	31.8	28.0	10.8	10.6	11.3	15.3	15.4	19.6	13.2	15.2	19.5	20.1	24.7	23.3	35.0	30.8	49.8	42.4
Central Provinces and Berar	233.98	205.91	62.32	53.63	10.87	10.51	7.89	8.46	11.68	13.11	12.34	12.73	14.48	13.04	19.46	14.83	20.06	24.63	68.38	58.28
Madras Presidency	162.19	164.80	34.8	32.7	8.3	8.0	5.5	5.7	7.8	11.0	9.2	10.8	11.2	11.5	16.6	13.4	27.0	22.8	67.0	66.7
Coorg	216.12	218.53	32.34	31.77	12.58	12.44	9.14	10.57	10.60	20.54	18.25	23.26	21.90	31.36	33.75	34.21	40.57	44.67	60.81	55.27
Bombay Presidency	166.89	151.93	51.73	48.83	9.53	10.55	7.90	10.02	9.89	13.69	11.67	13.99	14.49	15.67	20.61	16.80	32.55	25.96	79.11	75.07
Burma	195.31	172.24	28.24	24.72	8.60	8.75	6.46	6.15	9.46	8.50	11.11	11.27	13.61	13.66	17.18	14.48	24.50	20.55	57.93	56.45
Ajmer-Merwara	245.13	226.92	56.65	49.85	6.75	5.35	4.28	6.03	7.65	13.15	9.35	11.79	10.61	12.17	13.56	13.02	30.34	23.40	74.18	57.69
TOTAL	182.56	167.69	43.63	30.75	10.89	10.29	8.64	8.63	10.80	12.91	12.23	13.52	14.66	14.51	19.85	16.76	31.28	27.06	66.19	60.04

* Calculated on the number of births during 1923.

APPENDIX TO SECTION III—GENERAL POPULATION—contd.

H.—Deaths in Towns and Rural Circles compared.

Province.	NUMBER OF REGISTRATION CIRCLES			POPULATION.			RATIO OF DEATHS PER 1,000 OF POPULATION.		
	Rural.	Town.	TOTAL.	Rural.	Town.	TOTAL.	Rural.	Town.	TOTAL.
Delhi	14	1	15	236,246	264,293	500,539	34·53	40·91	37·90
Bengal	505	118	623	43,424,512	3,097,781	46,522,293	25·8	21·4	25·5
Bihar and Orissa	242	57	299	32,830,652	1,171,537	34,002,189	25·0	25·6	25·0
Assam	119	23	142	6,703,057	149,175	6,852,242	23·54	23·36	23·54
United Provinces of Agra and Oudh	1,101	89	1,190	42,372,494	3,003,293	45,375,787	22·48	35·86	23·37
Punjab	419	168	577	18,443,502	2,074,104	20,517,606	30·77	32·50	30·94
North-West Frontier Province	65	13	78	1,923,148	212,425	2,135,573	23·51	25·88	23·74
Central Provinces and Berar	405	107	512	12,557,767	1,354,993	13,912,760	30·34	32·29	30·53
Madras Presidency	231	296	527	35,829,718	5,172,978	41,002,696	21·6	26·4	22·2
Coorg	7	2	9	154,997	8,841	163,838	28·24	45·02	29·14
Bombay Presidency	251	115	366	15,421,829	3,743,785	19,165,614	24·87	30·11	25·89
Burma	387	65	452	9,605,607	1,217,011	10,822,618	19·02	35·45	20·87
Ajmer-Merwara	Not available.		23	Not available.		495,271	Not available.		25·62

APPENDIX TO SECTION

I.—Deaths from Cholera in the different

Year.	Delhi.	*Bengal.	Bihar and Orissa.	Assam.	United Provinces of Agra and Oudh.	Punjab.	(a) North-West Frontier Province.	Central Provinces.
1892 . . . . .	...	259,398	...	21,552	195,886	75,059	...	39,972
1893 . . . . .	...	126,976	...	21,849	12,154	639	...	557
1894 . . . . .	...	236,160	...	13,497	178,070	113	...	7,043
1895 . . . . .	...	177,087	...	18,962	51,665	546	...	15,509
1896 . . . . .	...	226,624	...	17,042	69,147	5,145	...	52,985
1897 . . . . .	...	196,247	...	33,240	44,208	632	...	52,131
1898 . . . . .	...	65,020	...	11,149	2,508	533	...	7
1899 . . . . .	...	107,678	...	6,390	6,142	1,816	...	176
1900 . . . . .	...	345,678	...	23,781	84,960	28,260	...	63,114
1901 . . . . .	...	110,753	...	7,468	53,995	180	117	49
1902 . . . . .	...	150,971	...	12,658	25,160	371	...	28
1903 . . . . .	...	203,499	...	8,360	47,159	14,088	1,354	437
1904 . . . . .	...	137,701	...	5,588	6,617	716	1	2,997
1905 . . . . .	...	146,339	...	**142,312	121,700	2,197	800	1,217
1906 . . . . .	...	192,596	...	109,278	149,549	4,232	...	38,788
1907 . . . . .	...	205,702	...	77,181	22,438	487	266	4,291
1908 . . . . .	...	203,008	...	59,320	83,544	12,297	2,845	9,048
1909 . . . . .	...	56,711	...	71,737	21,823	1,519	184	7,697
1910 . . . . .	...	162,611	...	117,969	102,402	2,121	1,605	6,316
1911 . . . . .	...	124,560	...	39,248	117,069	1,200	12	2,999
1912	408	95,487	77,023	(b) 14,308	18,894	1,833	1,320	34,313
1913	37	78,898	70,379	10,407	60,427	5,811	175	15,283
1914	12	69,324	32,115	9,370	32,498	6,056	2,300	20,345
1915	92	100,079	88,349	26,970	90,568	13,196	921	5,602
1916	69	70,836	90,582	13,099	33,300	1,651	194	39,205
1917	12	46,021	169,020	10,953	21,440	1,365	...	691
1918	8	62,379	205,594	14,077	119,746	257	31	3,351
1919	66	124,940	104,727	33,080	61,365	9,561	4,400	62,069
1920	7	54,199	26,241	2,421	6,952	138	2	3,491
1921	635	89,547	90,688	12,629	149,607	19,255	4,286	58,331
1922	6	51,712	28,805	16,219	2,330	128	92	61
1923	12	41,463	8,198	3,728	2,591	11	2	1,090

* Excluding Calcutta from 1890 to 1892.
† Statistics from 1890 to 1898 not available.
‡ Statistics not available.
§ Including 30 deaths in cantonments.
¶ Excluding Zamindaris.
‡ Including Berar from 1902.

III—GENERAL POPULATION—*contd.**provinces in India from 1892 to 1923.*

Berar.	Madras.	Coorg.	Bombay.	Lower Burma. †	Upper Burma.	Ajmer- Merwara.	Rajputana.	Central India.	Hyderabad (canton- ment stations.)	Mysora.
2,080	70,033	58	42,900	6,208	...	2,352	20,760	8,394	53	5,467
1,188	32,209	9	18,853	2,303	...	3	314	127	165	680
3,453	24,280	3	33,588	7,428	...	...	2	5,210	1,663	328
11,910	21,172	...	8,800	5,150	...	289	1,049	6,043	487	2,334
12,264	47,847	49	35,404	2,959	...	12	3,797	15,766	525	2,100
10,122	143,455	106	57,109	8,538	...	19	1,496	13,202	1,039	4,248
...	63,444	8	4,308	2,072	...	1	6	2	6	1,593
541	29,082	...	8,579	4,042	2,050	1	498	...	...	123
18,375	60,864	...	163,889	3,440	41	4,842	29,719	20,450	2,613	779
17	61,370	59	13,600	3,552	†	50	6	72	1	11,351
10	29,769	...	3,230	1,844	57	32	1,519	12	...	218
...	27,393	...	1,825	5,346	2,837	...	236	1,110	...	99
...	23,109	...	13,156	2,472	508	...	1	150	...	471
...	16,898	...	5,396	3,511	1,836	...	8	27	64	628
...	142,811	10	40,119	5,529	2,343	284	4,714	10,147	1,061	7,323
...	81,565	187	7,659	7,964	414	1	64	41	1	4,972
...	141,970	114	1,759	10,336	2,575	...	737	1,730	937	2,149
...	39,424	99	28,714	4,041	7,348	...	403	1,421	164	1,629
...	32,594	56	3,694	1,234	177	2	8	2,864	2	1,612
...	58,174	6	5,817	2,595	1,566	50	85	1,051	803	210
...	92,497	...	64,505	6,013	1,173	13	414	9,080	1,100	6,748
...	37,750	192	5,134	3,704	635	...	4,085	2,823	(c) 1,322	3,067
...	68,449	...	17,779	2,042	31	9	1,627	10,075	(c) 5,893	849
...	30,098	...	277	8,209	9,388	3	1,981	795	(c) 2,072	178
...	16,735	1	19,841	1,467	206	681	5,775	5,474	(c) 1,475	137
...	58,639	32	17,013	1,888	28	12	69	589	(c) 2,579	7,388
...	122,283	1	8,834	8,713	556	7	3	485	(c) 7,200	3,153
...	98,262	157	51,551	9,327	3,033	50	842	8,300	(c) 13,321	2,308
...	91,139	6	2,047	2,034	782	1	508	278	(c) 57	220
...	27,064	...	3,521	3,436	356	35	2,750	5,079	(c) 1,391	25
...	16,592	4	2,768	4,080	987	2	...	...	(c) 3,283	46
...	5,159	...	9,221	1,438	...	9	9	62	(c) 1,174	79

** Eastern Bengal and Assam.

(a) 1890-1900 included in the Punjab.

(b) Assam only.

(c) For the whole State including cantonment stations.

APPENDIX TO SECTION III—GENERAL POPULATION—*contd.*

J.—Deaths from Cholera in British Provinces, by months, during the year 1923.

Province.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	Ratio per 1,000 of population.	
														1923.	1922.
Delhi . . .	...	...	...	1	...	...	...	1	9	1	...	...	12	·02.	·01
Bengal . . .	3,048	1,767	4,618	8,935	3,895	1,306	1,184	1,161	1,029	1,604	8,952	8,984	41,488	·9	1·1
Bihar and Orissa .	152	248	452	338	756	698	1,009	2,334	1,352	497	322	140	8,198	·2	·7
Assam . . .	51	219	398	568	377	283	204	155	190	208	422	703	3,728	·54	2·36
United Provinces of Agra and Ondh.	3	4	24	53	81	143	186	492	1,064	457	83	1	2,591	·08	·05
Punjab . . .	...	...	...	1	1	...	2	2	5	...	...	...	11	0·001	·01
North-West Frontier Province.	...	...	...	...	...	2	...	...	...	...	...	...	2	0·001	·04
Central Provinces and Berar.	...	...	1	5	4	3	82	237	490	243	24	1	1,090	·08	·005
Madras Presidency	676	347	697	228	154	96	85	281	229	311	957	1,108	5,169	0·1	·4
Coorg . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	·02
Bombay Presidency	29	212	172	405	865	1,717	2,168	2,552	680	319	85	37	9,221	0·48	·14
Burma . . .	145	78	181	329	141	100	28	17	19	29	140	281	1,488	·14	·47
Ajmer-Merwara .	...	...	...	3	2	3	...	1	...	...	...	...	9	·01	·00
TOTAL .	4,104	2,875	6,543	10,866	6,276	4,301	4,948	7,133	5,047	3,869	5,985	11,255	73,002	·30	·50

APPENDIX TO SECTION III—GENERAL POPULATION—*contd.*

K.—Details of the distribution and occurrence of Cholera during the year 1923.

Province.	Mortality in 1923.	Mean mortality of previous 5 years.	Urban mortality.	Rural mortality.	Percentage of villages attacked.	Maximum mortality in any one district excluding towns.	Maximum mortality in any one town.	Month of maximum mortality.
Delhi	·02	·29	...	...	·95	...	...	September.
Bengal	·9	1·7	·9	·9	10·41	2·1	3·8	December.
Bihar and Orissa	·2	2·6	·6	·2	1·93	·7	8·1	August.
Assam	·54	2·32	·26	·55	4·18	1·03	2·78	December.
United Provinces of Agra and Oudh	·06	1·56	·17	·05	·38	·56	5·40	September.
Punjab	0·001	0·28	0·003	0·0001	·01	0·003	0·22	September.
North-West Frontier Province	0·001	0·82	0·01	...	·07	...	0·34	June.
Central Provinces and Berar	·08	1·83	·06	·08	·52	·36	2·51	September.
Madras Presidency	0·1	1·4	0·2	0·1	2·29	0·8	9·4	December.
Coorg . . . . .	...	...	...	...	...	...	...	.....
Bombay Presidency	0·48	0·70	0·34	0·51	4·16	3·06	11·47	August.
Burma	·14	·58	·39	·11	3·13	·78	9·66	April.
Ajmer-Merwara	·01	·04	...	...	·68	...	...	April and June.

APPENDIX TO SECTION III.—GENERAL POPULATION—contd.

L.—Small-pox mortality—1923.

Provinces, Districts, Towns.	Dolhl.	Bengal.	Bihar and Orissa.	Assam.	United Provinces of Agra and Oudh.	Punjab.	North-West Frontier Province.	Central Provinces and Berar.	Madras Presidency.	Coorg.	Bombay Presidency.	Burma.	Ajmer-Merwara.	Registration India.
I.—MORTALITY BY PROVINCES:—														
A.—Deaths by months—														
January	2	471	261	840	9	203	13	31	3,174	...	113	141	6	4,764
February	4	632	271	246	16	121	7	54	3,724	3	163	288	2	4,400
March	2	698	320	423	42	91	8	59	3,016	2	233	433	4	5,220
April	1	821	426	433	89	121	2	22	2,263	3	325	550	13	5,125
May	2	525	422	465	115	227	2	37	1,822	2	272	525	10	4,624
June	7	361	324	400	254	267	13	38	1,914	1	222	272	2	4,186
July	1	244	285	299	101	220	13	6	1,703	...	169	186	...	3,227
August	3	115	200	230	36	163	...	5	1,813	3	123	144	...	2,830
September	3	110	122	105	14	82	...	1	1,459	2	90	46	...	2,024
October	4	83	116	70	17	102	9	5	1,302	...	68	31	...	1,918
November	21	80	142	63	16	170	12	...	1,410	1	372	57	4	2,349
December	17	126	245	122	29	272	14	8	1,604	1	640	67	1	3,277
TOTAL	67	4,226	3,161	3,212	747	2,140	94	275	24,424	18	2,811	2,846	42	44,024
B.—Annual death ratios:—														
Ratio per 1,000 of population, 1922.	'13	'1	'09	'47	'02	0'10	0'04	'02	0'6	0'11	0'15	'26	'08	'12
Ratio per 1,000 of population, 1923.	'04	'2	'07	'38	'01	'08	'05	'02	'5	'01	'06	'12	'02	'17
Differences	+ '09	- '1	+ '02	+ '09	+ '01	+ '02	- '01	- '01	+ '1	+ '10	+ '09	+ '12	+ '06	+ '05

Mean ratio per 1,000 during 1918-22.	'11	'4	'2	'31	'09	0'23	0'38	'20	0'7	1'01	0'21	'19		'35
Difference	+ '03	- '3	-- '11	+ '15	- '07	-- '23	-- '34	-- '18	- '1	- '30	- '06	+ '07	- '23	- '17
II.—DISTRICT MORTALITY EXCLUDING TOWNS —														
Number of districts affected	Not available.	25	21	8	37	28	8	18	24	1	23	27	Not available.	215
Highest district ratio	Not available.	'8	'3	3'83	'05	0'28	0'05	'06	1'4	0'11	'48	2'03	Not available.	3'93
Name of that district	Not available.	Jalpaiguri	Balasure	Nowgong	Allahabad	Hoshiarpur	Peshawar	Nimar	South Arcot	Coorg	West Khandesh	Minbu	Not available.	Nowgong
Lowest district ratio	Not available.	'002	'005	'008	'01	0'001	0'01	'01	0'2	...	'005	'003	Not available.	0'001
Name of that district	Not available.	Bakarganj	Angul	Sylhet	Amargarh	Karnal	Bannu	Mandla	Godavari	...	Belgaum	Bassein	Not available.	Karnal
Number of districts without mortality.	Not available.	1	...	...	11	1	2	4	1	...	4	3	Not available.	77
District death rate per 1,000 of population.	Not available.	'1	'09	'47	'01	0'08	0'03	'01	0'6	0'11	0'09	'21	Not available.	*'16
III.—TOWN MORTALITY —														
Number of towns affected	Not available.	41	28	4	37	67	3	15	188	1	51	36	Not available.	469
Highest town ratio	Not available.	1'4	1'1	1'15	3'97	4'16	0'53	0'44	23'9	0'32	12'57	14'61	Not available.	21'9
Name of that town	Not available.	Berhampur	Gaya	Gauhati	Sikandra-bad	Pindi Bhattian	Peshawar	Mengrul Dastagir	Cannanore	Virajpet	Malegaon	Yenangyaung	Not available.	Cannanore
Lowest town ratio	Not available.	'02	'02	'13	'01	0'04	0'09	'01	0'03	...	'01	'07	Not available.	'01
Name of that town	Not available.	Dacca	Puri	Tespur	Benares	Sialkot	Nowshera Kalan	Nagpur	Vizianagram	...	Ahmedabad	Insein	Not available.	Ahmedabad
Number of towns without mortality.	Not available.	77	31	19	'53	91	10	92	108	1	64	29	Not available.	5,74
Town death rate per 1,000 of population.	Not available.	'1	'1	'18	'16	0'34	0'21	'07	0'9	0'11	0'38	0'71	Not available.	*'45
IV.—INFANTILE MORTALITY —														
Children under one year	Not available.	295	311	459	234	617	19	65	8,485	...	726	192	Not available.	11,403
Children 1—10 years	Not available.	769	571	1,270	317	1,083	55	163	8,440	...	1,423	483	Not available.	14,577
Percentage of children in total small-pox mortality.	Not available.	25'12	27'90	53'81	73'76	79'44	73'72	73'91	69'31	...	73'68	23'71	Not available.	*59'08

* Excluding Delhi and Ajmer-Merwara.

APPENDIX TO SECTION III.—GENERAL POPULATION—contd.

M.—Fever mortality—1923.

Provinces, Districts, Towns.	Delhi.	Bengal.	Bihar and Orissa.	Assam.	United Provinces of Agra and Oudh.	Punjab.	North-West Frontier Province.	Central Provinces and Berar.	Madras Presidency.	Coorg.	Bombay Presidency.	Burma.	Ajmer-Merwara.	Registration India.
I.—MORTALITY BY PROVINCES —														
A.—Deaths by months —														
January	410	97,321	46,341	10,236	63,230	26,304	3,928	15,897	34,210	315	18,697	6,518	641	326,148
February	442	65,908	35,410	7,513	51,907	21,040	3,168	13,764	25,826	255	16,951	6,554	778	249,536
March	828	66,376	40,067	7,470	62,390	22,315	3,006	15,970	25,407	247	20,698	6,540	1,055	262,304
April	1,604	72,825	45,749	7,707	64,695	23,731	2,517	18,156	24,086	264	10,120	6,037	1,120	276,111
May	1,216	66,249	53,736	9,238	67,067	34,520	2,398	25,194	25,707	837	17,934	5,734	1,071	310,399
June	1,128	54,082	53,064	9,591	77,822	33,483	2,969	20,778	25,295	492	12,819	6,511	849	304,972
July	543	59,392	45,935	9,767	63,071	26,402	2,145	14,053	24,122	453	11,050	6,003	537	265,062
August	470	55,161	49,907	9,558	56,904	23,180	2,108	16,875	26,762	319	13,900	7,090	605	261,637
September	631	62,971	55,554	7,854	65,838	37,998	2,692	19,900	24,270	338	15,154	5,964	951	300,291
October	979	89,044	60,899	8,848	79,958	62,349	3,349	26,974	25,419	280	16,590	5,645	761	379,375
November	723	63,146	53,364	9,251	72,794	54,630	4,517	21,467	26,589	242	16,213	5,454	706	360,197
December	632	127,420	60,114	10,316	74,422	54,158	7,096	16,547	29,789	371	16,307	7,671	732	407,576
TOTAL	9,694	909,795	599,640	106,347	780,049	420,398	39,681	233,575	318,172	3,862	196,231	79,629	9,805	3,706,298
B.—Annual death ratios:—														
Ratio per 1,000 of population, 1923.	19.36	19.5	17.6	15.62	17.19	20.49	18.67	16.79	7.8	23.69	10.24	7.27	19.70	15.35
Ratio per 1,000 of population, 1922.	13.45	19.0	17.0	16.35	20.04	14.05	18.72	17.05	7.8	28.10	10.33	7.69	16.53	15.23
Difference	+5.93	+0.5	+0.6	-.73	-2.85	+6.44	-.05	-.26	...	-4.41	-0.09	-.42	+3.17	+0.12

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Mean ratio per 1,000 during 1918—1922.	20'05	24'4	26'2	18'83	36'65	36'84	28'01	38'90	11'9	28'88	23'06	11'30	34'83	25'03
Difference ...	-9'69	-4'9	-8'6	-3'31	-18'46	-6'85	-10'24	-17'17	-3'4	-0'18	-12'62	-4'02	-15'12	-9'07
II.—DISTRICT MORTALITY EXCLUDING TOWNS.—														
Number of districts affected ...	Not available.	26	21	8	48	29	5	22	25	1	27	30	Not available.	242
Highest district ratio ...	Not available.	32'0	26'6	25'46	28'36	38'81	24'74	26'68	17'6	24'76	17'72	18'62	Not available.	30'81
Name of that district ...	Not available.	Bijnajpur.	Purnea	Goalpara	Bulandshahr.	Muzaffargarh.	Kohat	Drug	Yuzurapatam.	Coorg	Thana	Vavoy	Not available.	Muzaffargarh.
Lowest district ratio ...	Not available.	10'9	8'6	10'37	10'14	13'17	17'20	7'76	28	...	6'35	5'43	Not available.	3'3
Name of that district ...	Not available.	Howrah.	Puri	Lakhimpur.	Gonda	Shahpur	Peshawar	Buldana	North Arcot.	...	Belgaum	Myingyan	Not available.	North Arcot.
Number of districts without mortality.	Not available.	...	...	...	...	...	...	...	...	...	...	...	Not available.	...
District death rate per 1,000 of population.	Not available.	20'5	17'8	16'88	17'26	20'97	19'65	17'41	6'2	24'76	11'08	7'85	Not available.	15'94
III.—TOWN MORTALITY —														
Number of towns affected ...	Not available.	118	57	39	89	157	12	107	294	2	115	65	Not available.	1,040
Highest town ratio ...	Not available.	24'1	25'0	16'71	30'09	55'34	23'47	24'58	20'3	7'29	27'00	13'78	Not available.	56'24
Name of that town ...	Not available.	Murshidabad.	Kendrapara.	Nazra	Bhindaban	Fatehabad	Nawan-shar.	Dhatapara	Gurzala	Meronara	Barah	Minbya	Not available.	Fatehabad.
Lowest town ratio ...	Not available.	2'1	5'0	1'63	8'49	0'87	8'43	1'71	1	0'94	1'5	1'12	Not available.	1
Name of that town ...	Not available.	Rajbari.	Bihar	Karimganj.	Nainital	Mianchannu.	Bannu	Mehkar	Kampti	Virajpet	Deolali Cantt.	Danubyu	Not available.	Kampti
Number of towns without mortality.	Not available.	...	...	...	...	1	4	...	2	...	...	...	Not available.	3
Town death rate per 1,000 of population.	Not available.	6'5	12'2	8'00	16'27	16'20	12'58	11'07	15'0.	4'93	6'78	2'24	Not available.	19'08

* Excluding Delhi and Ajmer-Merwara.

APPENDIX TO SECTION III. GENERAL POPULATION—contd.

N.—Dysentery and Diarrhea mortality—1923.

Provinces, Districts, Towns.	Delhi.	Bengal.	Bihar and Orissa.	Assam.	United Provinces of Agra and Oudh.	Punjab.	North-West Frontier Province.	Central Provinces and Berar.	Madras Presidency.	Coorg.	Rombay Presidency.	Burma.	Ajmer-Morwara.	Registration India.
I.—MORTALITY BY PROVINCES—														
A.—Deaths by months—														
January	15	2,046	1,335	679	540	676	23	1,483	6,184	7	1,500	483	16	16,007.
February	14	1,544	995	484	434	541	11	1,240	4,768	3	1,347	404	14	11,789
March	23	1,681	1,202	550	575	771	19	4,610	4,548	5	1,263	397	20	12,658
April	33	2,180	1,340	659	830	687	16	1,749	4,060	5	1,407	453	38	13,466
May	34	1,916	1,320	638	1,249	1,197	17	1,663	3,667	14	1,626	564	24	14,228
June	27	1,537	1,080	852	1,312	943	11	1,425	4,295	20	1,550	753	13	13,782
July	28	1,483	1,420	875	892	764	7	1,381	4,751	9	2,079	872	5	14,564
August	50	1,677	1,779	804	1,165	843	12	2,897	5,624	10	3,189	733	22	16,906
September	78	1,691	1,804	816	1,334	1,278	20	3,931	5,255	3	2,750	594	36	19,598
October	62	1,876	2,114	908	1,129	1,374	15	3,359	4,818	11	2,175	365	28	16,252
November	36	1,711	2,047	867	770	1,362	17	2,115	5,779	6	1,683	395	28	16,825
December	21	2,167	2,443	778	739	1,171	28	1,519	6,406	12	1,500	653	18	17,545
TOTAL	424	21,519	18,768	9,109	10,678	11,612	196	24,321	60,323	104	22,338	6,685	261	186,458
B.—Annual death ratios —														
Ratio per 1,000 of population, 1923.	·84	·5	·5	1·33	·34	0·57	0·09	1·75	1·5	0·63	1·16	·82	·53	·77
Ratio per 1,000 of population, 1922.	·73	·5	·5	1·49	·23	·34	·10	1·84	1·3	1·15	1·10	·83	·52	·74.
Difference	+·11	...	...	-·16	+·01	+·23	-·01	-·09	+·2	-0·52	+·06	-·31	+·01	+·03

Mean ratio per 1,000 during 1918-1922.	'09	'06	1-1	1-01	'36	0-48	0-15	2-08	1-6	0-76	1-53	1-07	'76	1-00
Difference	-09	-1	-6	-58	-11	+11	-06	-03	-1	-0-13	-37	-45	-23	-0-23
II.—DISTRICT MORTALITY EXCLUDING TOWNS—														
Number of districts affected	Not available.	26	21	8	47	29	5	23	25	1	27	30	Not available.	241
Highest district ratio	Not available.	2-4	4-3	2-46	3-27	3-36	0-20	2-76	6-3	0-33	2-90	1-18	Not available.	6-75
Name of that district	Not available.	Howrah	Cuttack	Lakhimpur	Gathwal	Rawalpindi	Dehra Ismail Khan	Akola	The Nilgiris	Coorg	Sholapur	Mergui	Not available.	Akola
Lowest district ratio	Not available.	0-01	0-008	0-19	0-01	0-01	0-01	0-18	0-4	...	0-01	0-01	Not available.	0-08
Name of that district	Not available.	Malda	Shahabad	Goalpara	Shahjahanpur	Hosharpur	Kohat	Balaghat	Nellore	...	Larkana	Kyaukse	Not available.	Shahabad
Number of districts without mortality.	Not available.	...	...	...	1	...	...	...	...	...	...	...	Not available.	1
District death rate per 1,000 of population.	Not available.	3	5	1-27	0-09	0-47	0-04	1-71	1-3	0-33	1-03	0-43	Not available.	0-64
III.—TOWN MORTALITY—														
Number of towns affected	Not available.	115	45	23	81	136	9	106	278	2	104	64	Not available.	063
Highest town ratio	Not available.	11-2	4-3	8-60	11-38	4-95	1-39	9-30	10-4	9-16	5-24	6-05	Not available.	11-38
Name of that town	Not available.	Khairpai	Puri	Doom Dooma	Hathras	Ludhiana	Kalaehi	Champa	Vaidiswaran-Koyil	Virajpet	Pandharpur	Mawlamyingsyiun	Not available.	Hathras
Lowest town ratio	Not available.	0-05	0-06	0-38	0-10	0-05	0-09	0-13	0-1	4-05	0-09	0-14	Not available.	0-05
Name of that town	Not available.	Dinajpur	Katihar	Nazira	Kandhla	Hosharpur	Nowshera Kalan	Daryaba	Narasapatam	Mercara	Tando Adam	Nyaungu	Not available.	Hosharpur
Number of towns without mortality.	Not available.	3	13	...	8	22	4	1	18	...	11	1	Not available.	80
Town death rate per 1,000 of population.	Not available.	2-3	1-0	3-72	2-31	1-44	0-57	2-08	2-9	5-88	1-75	2-13	Not available.	2-16*

* Excluding Delhi and Ajmer-Merwara.

APPENDIX TO SECTION III.—GENERAL POPULATION—*contd.*

O.—Plague mortality—1923.

Province or State.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.		
													1923.	1922.	
BRITISH PROVINCES.															
Delhi	98	236	806	964	336	44	...	5	16	32	24	144	2,795	191	
Bengal . . . . .	...	2	13	47	31	2	...	1	1	...	...	1	98	150
Bihar and Orissa	3,543	5,646	11,257	6,117	922	92	28	15	78	43	253	920	23,911	16,063	
Assam . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
United Provinces of Agra and Oudh.	9,992	17,065	26,181	13,832	2,351	359	39	93	171	533	1,065	2,508	74,167	23,291	
Punjab	609	1,300	5,632	15,327	13,784	4,944	475	197	700	3,222	2,461	2,479	50,033	7,780	
North-West Frontier Province . . . . .	...	...	5	97	294	546	60	39	121	1,020	909	653	3,743	124
Central Provinces and Berar	2,287	2,181	3,333	1,595	235	23	23	557	1,476	1,041	1,059	1,167	15,867	6,149	
Madrâs Presidency	2,051	2,027	1,262	607	170	143	632	1,467	1,169	874	919	869	12,110	9,103	
Coorg . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	8
Bombay Presidency	2,101	2,006	2,843	1,047	1,018	459	987	3,130	6,053	7,070	3,816	2,302	33,741	8,379	
Burma	1,653	1,734	1,191	404	273	323	316	242	190	164	350	761	7,606	7,392	
Ajmer-Merwara . . . . .	...	...	...	5	...	...	...	...	...	...	...	...	5	3
TOTAL	1923	32,339	32,203	52,583	40,943	19,414	6,935	2,568	5,746	9,974	13,869	10,753	11,791	219,147	...
	1922	6,748	12,739	15,110	9,635	3,680	1,153	1,040	2,006	2,613	3,245	4,995	12,568	...	77,615
INDIAN STATES, ETC.															
Bengal Indian States . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bihar and Orissa Indian States . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assam Indian States . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...

XXIII

United Provinces of Agra and Oudh Indian States.	6	48	68	54	6	...	...	...	...	7	10	69	263	12
Punjab Indian States	14	104	646	646	386	20	...	...	13	73	86	263	2,160	39
Jammu and Kashmir States: . . . . .	...	27	68	264	189	87	...	...	...	...	19	72	719	643
Baluchistan . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajputana	12	...	3	6	...	...	...	...	...	...	...	...	21	...
Central India	95	98	173	89	14	...	...	...	...	18	10	23	510	747
Indian States in Central Provinces . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baroda State	12	36	57	15	4	1	...	...	1	...	2	1	130	139
Bombay Presidency Indian States	266	169	146	121	62	44	68	380	675	823	493	269	3,415	1,190	
Burma Indian States	26	3	6	6	2	38	21	...	...	1	2	28	133	91
Hyderabad State	2,722	3,000	4,009	3,242	721	98	18	1,218	7,147	11,173	7,115	4,851	45,407	12,107	
Mysore State	678	664	468	332	233	322	576	1,453	2,059	1,613	1,366	939	10,995	8,945	
Bangalore Civil and Military Station	30	16	13	3	2	1	...	4	4	18	8	6	106	685	
Madras Indian States . . . . .	...	...	...	...	1	...	...	...	...	...	...	...	1	11
TOTAL	1923	4,063	4,063	5,637	4,778	1,630	605	683	2,995	9,609	18,926	9,066	6,484	66,868	...
	1922	1,049	1,067	908	616	250	436	643	2,335	3,176	4,951	3,698	5,768	...	24,511
GRAND TOTAL	1923	28,402	36,265	58,220	46,720	21,064	7,540	3,361	8,741	19,873	27,624	19,642	18,275	202,932	...
	1922	9,797	12,740	16,019	10,261	3,910	1,600	1,366	4,431	5,768	7,406	8,698	18,338	...	102,126
Calcutta City . . . . .	...	2	13	44	14	1	...	1	1	...	...	1	77	144
Bombay City	25	85	380	424	294	33	13	16	29	13	2	4	3,929	629	
Madras City	1	...	...	...	...	...	...	...	...	...	...	...	1	1

APPENDIX TO SECTION III.—GENERAL POPULATION—concl'd.

P.—Mortality from Respiratory Diseases—1923.

Provinces, Districts, Towns.	Delhi.	Bengal.	Bihar and Orissa.	Assam.	United Provinces of Agra and Oudh.	Punjab.	North-West Frontier Province.	Central Provinces and Berar.	Madræs Presidency.	Coorg.	Bombay Presidency.	Burma.	Ajmer-Merwara.	Registration India.
1.—MORTALITY BY PROVINCES.—														
A.—Deaths by months—														
January	340	2,759	579	700	2,255	4,093	217	3,417	5,510	19	8,454	943	23	29,339
February	361	2,373	522	577	1,820	2,042	175	2,585	4,316	11	7,025	837	13	24,357
March	436	2,550	535	630	2,108	3,225	183	3,159	4,759	15	9,103	970	29	27,252
April	462	2,279	511	574	2,227	2,873	110	2,897	4,020	22	7,657	970	21	24,569
May	410	2,082	478	479	2,346	3,090	130	2,987	4,341	20	7,020	707	13	24,163
June	377	1,758	399	518	2,415	2,814	124	2,706	4,032	20	5,105	934	14	21,316
July	287	1,909	494	561	1,738	2,244	92	1,907	4,472	15	5,211	881	10	19,911
August	359	2,140	423	529	1,964	2,147	118	2,502	4,658	17	6,424	853	12	22,146
September	447	1,915	412	493	2,208	2,969	143	2,788	4,684	13	6,756	915	11	23,469
October	418	2,172	554	501	2,359	3,609	120	3,344	4,843	8	6,600	879	19	25,505
November	390	2,281	541	594	2,299	3,835	262	3,372	5,287	8	6,913	911	15	26,726
December	411	2,535	708	621	2,340	4,993	278	3,059	5,406	18	7,234	1,014	19	28,729
TOTAL	4,683	20,655	6,151	6,830	26,408	38,434	1,947	35,023	55,951	191	84,334	10,954	119	297,365
B.—Annual death ratios—														
Ratio per 1,000 of population, 1923.	9'36	'6	'1	'09	'57	1'87	0'91	2'52	1'4	1'17	4'40	1'00	'40	1'23
Ratio per 1,000 of population, 1922.	7'88	'6	'1	1'52	'56	1'05	'82	2'62	1'2	1'10	4'31	1'11	'39	1'20
Difference	+1'48	...	...	—'23	+ '01	—'08	+ '09	—'10	+ '02	+ '07	+ '09	—'11	+ '02	+ '03

Mean ratio per 1,000 during 1918-1922.

Difference

II.—DISTRICT MORTALITY EXCLUDING TOWNS.—

Number of districts affected

Highest district ratio

Name of that district

Lowest district ratio

Name of that district

Number of districts without

District death rate per 1,000 of population.

III.—TOWN MORTALITY—

Number of towns affected

Highest town ratio

Name of that town

Lowest town ratio

Name of that town

Number of towns without mortality.

Town death rate per 1,000 of population.

11.47	'5	'2	3.74	'63	2.35	0.85	3.20	1.3	0.30	5.05	1.17	'57	1.45
-2.11	+1	-1	-2.75	-0.06	-0.45	+2.28	-0.68	+0.1	+0.97	-0.65	-0.17	-17	-0.23
Not available.	26	21	8	48	29	5	22	25	1	27	30	Not available.	242
1.1	1.2	2.73	0.42	11.24	1.10	0.01	4.0	0.23	10.59	1.17	11.24	Ambala,	
Howrah.	Puri	Lakhimpur.	Hamirpur.	Ambala.	Hazara.	Jubbulpur.	The Nilgiris.	Coorg.	Surat.	Sagaing.	Ambala,		
'62	'002	'15	'01	0.12	0.03	'16	0.3	..	'40	'01	'002	Not available.	
Malda.	Palaman.	Golpava.	Unao.	Shahpur.	Bannu.	Balaghat.	Ganjam.	..	Upper Sind Frontier.	Kyaukse.	Palaman.		
...	...	...	...	...	...	...	...	...	...	...	...	Not available.	
'3	'1	'85	'17	1.68	0.48	2.28	1.2	2.27	'30	'85			
Not available.	0	46	20	83	163	13	106	263	2	113	63	Not available.	976
11.7	2.6	6.40	17.68	12.06	0.55	12.96	10.1	24.64	16.54	14.95	24.64	Virajpet.	
Chandrakona.	Puri.	Tezpur.	Mahoba.	Sadhaura.	Peshawar.	Garhakota.	Parasagudi.	Virajpet.	Ahmedabad.	Ye-u	Virajpet.		
'1	'1	'27	'05	0.09	0.13	'19	0.1	13.92	'18	'40	'05	Not available.	
Barisal.	Madhubani.	Golaghat.	Deoband	Nankana-Sahib.	Baffa.	Sanear.	Puliyangudi.	Mercara.	Ratodero.	Letpadan.	Deoband.		
4	11	3	6	5	..	1	38	..	2	2	67	Not available.	
4.7	'7	3.00	6.25	4.49	4.80	4.76	2.6	17.76	9.07	6.52	5.04		

*Excluding Delhi and Ajmer-Merwara.

Appendix to Section IV.

PRISONERS.

APPENDIX TO

A.—Administrations.	Years.	Average Strength.	RATIO PER						
			Constantly Sick.	A.—ADMISSIONS D.—DEATHS					
				Cholera.		Small-pox.		Malaria.	
				A.	D.	A.	D.	A.	D.
Birma	1913-22	16,006	19	.8	.5	.2	.06	30.2	.3
	1922	16,230	24	1.1	.68	.1	...	46.2	.43
	1923	16,251	24	.06	.06	.06	.06	46.6	.37
Assam	1913-22	2,072	45	1.1	.5	.3	...	109.0	1.5
	1922	2,592	45	.8	.77	.8	...	209.9	1.54
	1923	2,233	35	...	...	.4	...	250.8	1.79
Bengal	1913-22	13,730	54	1.3	.5	.4	.07	347.8	1.5
	1922	13,867	45	2.7	1.30	.1	...	337.9	1.51
	1923	12,522	44	.5	.24	...	...	298.5	1.60
Bihar and Orissa	1913-22	6,920	46	3.7	1.6	.7	.06	217.2	1.0
	1922	4,968	45	.2	.20	...	...	262.2	.60
	1923	5,175	43	.2	.19	5.2	...	203.7	.58
United Provinces of Agra and Oudh	1913-22	25,821	21	.6	.3	.6	.03	131.0	.6
	1922	26,783	22	.1	...	.0	...	204.6	.41
	1923	27,946	22	.04	.04	.5	...	190.1	.83
Punjab	1913-22	14,977	36	.1	.07	.3	...	239.2	.9
	1922	16,364	31	...	...	.1	...	328.4	1.00
	1923	17,893	30	...	...	.4	...	404.1	1.18
North-West Frontier Province	1913-22	2,704	27	.04	.04	.5	...	465.0	1.3
	1922	3,302	39	...	...	...	...	765.3	1.82
	1923	3,299	35	...	...	...	...	514.4	2.42
Central Provinces	1913-22	4,008	15	.4	.2	.8	.02	63.3	.4
	1922	4,192	16	.2	.24	.2	...	44.8	...
	1923	4,089	13	.2	...	...	...	64.6	.24
Bombay	1913-22	10,709	27	.3	.2	.8	.06	173.2	.7
	1922	11,062	23	...	...	.5	.09	194.6	.36
	1923	10,209	26	...	...	.3	...	238.8	.78
Madras	1913-22	12,266	19	1.0	.6	.7	.1	26.2	5.9
	1922	18,963	33	3.0	1.53	1.4	.16	98.3	1.37
	1923	19,222	18	...	...	.2	...	30.9	.36
India†	1913-22	108,980	29	.9	.4	.5	.05	168.4	.8
	1922	120,332	30	1.0	.52	.3	.03	204.7	.85
	1923	119,456	27	.1	.05	.5	.01	198.6	.85
Andamans	1913-22	11,930	53	...	...	.1	...	895.4	2.48
	1922	10,184	33	...	...	.3	...	272.7	2.75
	1923	9,593	37	...	...	...	...	330.7	3.02
India‡	1913-22	120,910	32	.8	.4	.5	.4	240.1	1.0
	1922	130,516	31	.9	.48	.3	.03	210.0	1.00
	1923	129,049	27	.1	.05	.4	.008	208.4	1.01

* Excluding subsidiary jails.

† Including Delhi, Ajmer, Sibi, Quetta, Meerana and Secunderabad and excluding Andamans.

‡ The decennial ratios are worked on the total strength of the ten year period.

§ Including Andamans.

SECTION IV—PRISONERS.

MILLE OF STRENGTH.*

FROM

Tubercle of the lungs.		Pneumonia.		Respiratory Diseases.		Dysentery.		Diarrhoea.		Anæmia and Debility.		All causes.	
A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
11.8	4.7	4.8	1.7	10.4	.5	26.3	2.0	8.0	.2	4.3	.2	366.2	19.4
12.6	4.00	4.5	1.11	15.1	.55	39.4	1.23	13.5	.62	5.5	.06	508.8	15.71
10.5	3.5	4.7	1.17	8.5	.12	34.9	1.17	5.0	.06	4.1	...	1,030.4	12.55
7.3	3.3	11.5	3.4	34.3	.8	136.5	4.5	124.0	.5	6.0	.4	991.2	26.6
7.3	3.47	20.4	5.79	45.1	1.16	167.1	3.09	75.6	.77	3.5	.77	970.7	24.31
9.4	5.37	17.9	5.37	46.1	...	62.2	2.24	61.8	1.34	5.4	.45	804.7	25.08
9.4	2.9	11.4	2.6	46.0	.7	163.4	4.7	124.3	.7	15.4	.5	1,240.9	20.5
7.3	2.31	9.5	2.60	38.1	.58	120.5	3.17	92.9	.50	12.6	.43	1,201.1	19.25
10.6	3.19	10.1	1.84	37.3	.24	96.2	2.48	96.7	.82	18.8	.09	1,121.7	15.89
19.3	5.2	10.8	3.2	38.7	1.0	150.1	8.8	113.9	1.3	20.0	.8	1,002.9	34.1
13.2	4.61	10.8	2.21	38.7	.20	110.3	3.01	137.7	.40	1.2	.20	1,027.5	18.04
8.9	2.71	13.7	2.90	39.6	.77	221.1	5.20	126.2	.77	2.3	1.19	1,041.2	20.50
8.2	2.2	13.1	3.1	22.8	.9	31.7	2.1	17.7	.8	7.2	.3	502.9	18.1
11.4	1.57	18.4	4.59	29.0	1.23	34.8	1.64	18.4	.45	6.0	.15	601.1	14.34
9.0	2.29	18.5	3.43	28.4	.64	23.7	1.47	16.6	.43	4.8	.11	550.8	13.24
12.0	4.4	21.3	4.6	47.0	8.0	27.2	1.3	39.1	1.1	24.6	.5	845.9	24.1
5.1	2.59	12.3	1.76	41.2	...	10.8	.12	39.6	.29	10.7	.18	910.1	11.55
4.1	2.01	16.4	4.01	48.2	1.01	10.7	.39	19.6	.45	9.6	.50	876.7	14.70
7.0	2.0	22.3	6.6	35.2	1.3	50.6	2.7	19.7	1.0	8.7	.6	904.6	30.0
11.5	3.94	17.0	5.76	58.8	1.30	30.9	2.42	22.1	.61	6.4	.61	1,356.5	27.56
9.4	2.42	26.6	6.36	46.7	2.12	30.3	.30	10.6	.60	3.3	1.30	1,030.9	20.31
6.4	2.9	8.6	2.1	16.3	1.1	38.7	2.7	21.6	1.5	3.1	.2	391.4	23.4
8.1	5.01	11.2	2.86	12.6	.24	46.3	5.25	17.2	.24	1.7	.24	344.2	20.04
8.1	3.91	9.3	3.18	31.3	1.47	69.5	2.90	23.0	.49	4.2	.24	377.4	19.81
5.2	1.9	19.4	5.1	42.0	.1	40.2	1.1	43.3	.9	3.6	.2	741.4	21.2
5.2	2.08	19.5	4.07	50.8	.72	29.5	.27	50.6	.72	3.1	.45	757.4	14.28
4.8	1.96	14.8	2.94	45.5	.49	31.7	.29	43.9	1.18	2.9	.19	725.8	11.26
7.6	2.7	5.9	1.9	18.1	.5	45.1	4.3	4.4	.2	3.9	.2	359.0	21.7
7.9	2.74	13.7	5.27	23.7	.63	110.8	18.62	2.3	.16	2.9	.26	532.2	47.51
9.7	3.07	9.6	2.34	23.9	.31	50.0	2.81	1.1	...	2.5	.05	322.6	16.59
9.7	3.2	12.7	3.2	30.1	.8	59.6	3.0	42.6	.7	9.9	.4	689.6	22.2
8.8	2.70	13.4	3.45	32.1	.63	59.6	4.33	36.2	.45	6.3	.25	546.6	20.8
8.8	2.78	13.3	2.92	31.7	.59	46.7	1.6	29.3	.40	6.2	.17	735.8	14.05
5.3	3.6	14.8	6.56	57.4	1.8	71.5	4.4	39.2	.8	3.6	.2	1,478.5	33.1
5.8	1.47	10.0	3.93	42.2	.60	37.0	1.23	20.3	.10	6.6	.49	749.5	18.85
3.5	1.46	7.9	3.44	26.6	.68	71.4	7.5	25.7	...	7.2	.52	804.1	28.77
9.3	3.2	12.9	3.5	32.8	.9	60.9	3.1	42.5	.7	9.3	.3	767.4	23.4
8.6	2.60	13.1	3.49	32.9	.64	57.8	4.09	35.0	.42	6.8	.27	746.9	20.69
8.0	2.68	12.9	2.96	31.3	.59	48.4	2.08	29.0	.37	6.2	.19	740.6	16.0

APPENDIX

B.—Groups.	Years.	Average Strength.†	Constantly Sick.	RATIO PER					
				A.—ADMISSIONS D.—DEATHS					
				Influenza.		Cholera.		Small-pox.	
				A.	D.	A.	D.	A.	D.
Group I.—Burma Coast and Islands.	1913-22	10,766	19	33·2	·8	·4	·8	·2	·04
	1922	10,759	25	6·9	...	·4	·28	·1	...
	1923	11,063	25	9·4	...	·09	·09	...	...
" II.—Burma Inland	1913-22	5,108	19	42·3	·2	1·7	1·1	·8	·1
	1922	5,471	21	8·8	...	2·6	1·46	...	...
	1923	5,168	23	1·0	...	...	...	·2	·2
" III.—Assam	1913-22	1,972	45	100·1	3·4	1·1	·6	·8	...
	1922	2,488	45	49·0	·40	·8	·80	·8	...
	1923	2,143	35	·5	...	...	...	·5	...
" IV.—Bengal and Orissa	1913-22	14,533	53	57·2	1·2	1·4	·5	·5	·06
	1922	14,164	45	19·5	·45	2·6	1·27	·1	...
	1923	12,765	44	37·4	·24	4·7	·24	...	...
" V.—Gangetic Plain and Chutia Nagpur.	1913-22	22,502	28	49·0	3·3	1·4	·6	·6	·04
	1922	22,042	28	31·5	·95	·1	·05	...	...
	1923	23,012	28	18·7	·09	·04	·04	1·8	...
" VI.—Upper Sub-Himalaya	1913-22	15,191	29	33·2	3·5	·5	·2	·4	·01
	1922	17,098	25	14·3	·47	·1	...	·1	...
	1923	17,277	25	5·1	...	·06	·06	·4	...
" VII.—North-West Frontier, Indus valley and North Western Rajputana.	1913-22	11,817	34	42·9	4·8	·09	·05	·6	·03
	1922	13,168	35	25·8	·30	...	...	·4	·08
	1923	13,078	30	6·0	...	...	...	·2	...
" VIII.—South Western Rajputana, Central India and Gujarat.	1913-22	4,605	18	30·4	3·2	·5	·2	·4	...
	1922	4,619	17	17·8	·43	...	...	...	...
	1923	4,545	15	...	...	...	...	...	...
" IX.—Deccan	1913-22	8,942	23	67·9	4·7	·5	·3	·5	·01
	1922	9,030	27	27·4	·55	·1	·11	·2	...
	1923	8,520	17	18·7	...	·1	...	·1	...
" X.—Western Coast	1913-22	2,438	24	36·8	3·1	1·5	·7	1·8	·2
	1922	3,295	36	100·2	9·41	...	...	...	...
	1923	3,395	33	13·3	·29	...	...	...	...
" XI.—Southern India	1913-22	10,426	20	59·8	3·6	1·0	·5	·8	·9
	1922	17,416	32	42·5	4·36	3·2	1·67	1·6	·17
	1923	17,638	16	2·4	·17	...	...	·2	...
" XII.—Hills	1913-22	787	32	75·4	3·3	...	...	1·6	·4
	1922	665	47	14·6	...	...	...	1·5	...
	1923	729	53	39·2	...	...	...	...	...
India†	1913-22	108,980	29	48·0	2·8	·9	·4	·5	·04
	1922	120,332	30	26·4	1·29	1·0	·52	·3	·03
	1923	119,456	27	12·3	·08	·1	·05	·4	·008
Andamans	1913-22	11,930	53	32·0	2·6	...	...	·08	...
	1922	10,184	33	·9	·10	...	...	·3	...
	1923	9,593	37	13·6	·10	...	...	...	...
India§	1913-22	120,910	32	46·4	2·8	·8	·4	·5	·04
	1922	130,516	31	24·5	1·20	·9	·48	·3	·03
	1923	129,049	27	12·3	·08	·1	·05	·41	·008

* Excluding subsidiary jails.

† Including Aden and excluding Andamans.

‡ The decennial ratios are worked on the total strength of the ten year period.

§ Including Andamans.

TO SECTION IV—PRISONERS—contd.

MILLE OF STRENGTH.*

FROM		Malaria.		Pyrexia of uncertain origin.		Pneumonia.		Dysentery.		Diarrhoea.		All Causes.	
A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
28	5	308	2	433	05	41	14	290	20	180	1	8724	185
66	112	467	28	920	09	46	121	476	149	147	19	6080	1552
29	7	522	2	753	...	33	7	381	11	44	...	1,1651	105
21	6	292	5	209	...	63	24	219	17	66	5	3544	217
24	55	453	78	239	...	44	81	232	73	110	146	8137	1608
12	6	345	8	278	...	77	21	281	13	62	4	7662	185
9	4	1050	13	1043	5	117	34	1353	46	1221	4	9724	260
20	121	2022	121	354	40	213	603	1696	322	732	40	9538	2452
...	...	2510	10	37	...	177	51	644	23	622	9	7923	219
11	2	3402	14	124	03	119	27	1627	52	541	8	1,2271	214
18	21	3361	148	486	...	93	254	1213	311	926	49	1,1927	1892
14	55	3036	158	212	08	101	174	977	245	975	32	1,1133	1564
7	2	1556	8	87	06	109	29	632	38	432	9	6439	228
5	...	2370	45	44	...	170	363	517	219	437	32	7334	1443
9	17	1920	63	104	298	185	33	685	24	406	68	6876	1191
7	2	2222	9	157	06	201	43	279	14	354	10	7369	201
10	23	3028	58	61	06	168	398	214	64	357	41	7466	1293
14	35	3836	92	35	11	185	463	175	109	177	17	7953	1259
12	3	3004	13	287	05	262	60	347	19	319	8	8537	297
17	15	3666	159	624	30	189	372	125	61	303	38	1,0041	1800
12	31	3148	184	556	...	200	421	108	15	163	54	8031	1638
4	2	1407	6	3	02	134	29	235	11	208	7	4710	171
6	43	1498	...	...	...	106	238	160	43	95	43	4328	909
...	...	1245	22	24	...	112	176	99	22	147	22	4216	704
3	1	1028	4	277	1	110	26	418	18	401	12	6242	210
1	11	994	22	588	...	109	354	404	266	444	55	6290	1794
1	...	1594	59	50	...	74	235	561	12	404	12	6022	1549
16	4	1292	6	18	...	81	28	716	38	315	14	5888	267
15	91	1885	...	...	...	64	243	1108	1335	364	121	8798	4158
85	29	1625	...	...	...	88	442	605	413	369	118	5774	2831
8	1	295	7	133	05	67	21	457	43	46	2	3856	222
32	35	413	150	82	29	145	545	1055	1774	25	17	4958	4519
19	17	320	40	4	...	94	21	480	232	12	...	3179	1423
11	3	2003	24	673	4	207	41	951	38	672	18	9482	264
...	...	2774	292	1518	146	350	438	934	438	920	438	1,1854	2774
14	...	4032	...	1597	...	406	677	541	...	501	135	1,3640	1759
11	3	1684	83	199	06	127	32	598	30	428	7	6896	222
19	32	2047	85	307	11	134	345	596	433	362	45	7466	2084
13	28	2084	101	187	02	129	206	486	208	290	37	7408	160
11	3	8954	25	50	1	148	66	715	44	392	8	1478	339
8	...	2727	275	15	...	100	393	370	128	208	10	7495	1885
63	...	3307	302	...	...	79	344	714	75	257	...	8041	2877
11	3	2401	10	185	07	129	35	609	31	425	74	7674	234
18	30	2100	100	284	10	131	349	578	409	350	42	7469	2069
13	28	2084	101	186	02	129	296	484	208	290	37	7408	160

C.—Causes of admission.	Years.*	January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total
Cholera	1919	...	4	18	31	21	28	91	47	32	7	3	2	279
	1920	3	...	8	2	9	9	2	1	1	...	...	...	30
	1921	...	...	4	31	4	3	17	36	16	...	...	2	113
	1922	...	8	24	4	3	64	2	3	7	4	2	2	117
	1923	...	...	...	2	2	...	2	3	...	...	1	...	10
	Total	1919-1923	3	7	44	70	39	104	114	89	56	11	6	6	549
Enteric Fever	1919	1	4	2	12	14	7	6	2	10	5	2	...	65
	1920	9	11	6	8	9	12	13	12	10	8	8	4	105
	1921	7	5	3	11	10	7	10	16	14	9	6	5	103
	1922	8	20	12	23	35	33	22	18	18	20	14	12	230
	1923	11	9	9	18	13	14	20	23	20	12	12	8	169
	Total	1919-1923	36	49	32	72	81	73	71	71	67	54	37	29	672
Malaria	1919	1,070	904	1,140	1,257	1,399	1,515	1,695	1,817	3,232	3,781	3,203	1,836	22,849
	1920	1,099	875	1,138	1,382	1,277	1,143	1,567	2,463	2,607	2,400	2,315	1,615	19,971
	1921	1,063	816	1,059	1,456	1,602	1,189	1,533	2,235	3,250	4,031	2,843	1,760	22,837
	1922	1,223	1,114	1,246	1,529	1,558	1,555	1,807	2,243	3,004	4,203	3,078	1,976	24,636
	1923	1,375	1,122	1,331	1,420	1,830	1,834	1,988	2,410	4,013	4,203	3,309	2,006	26,000
	Total	1919-1923	5,830	4,831	5,914	7,044	7,666	7,286	8,590	11,277	16,108	18,708	14,748	9,193	117,193

Pyrexia of uncertain origin.	1919	72	115	145	126	196	260	224	264	142	106	68	61	1,794
	1920	88	54	81	80	111	186	234	251	324	305	265	153	2,132
	1921	127	56	69	112	118	150	214	310	296	365	324	304	2,365
	1922	257	345	355	349	292	269	397	289	271	351	308	214	3,697
	1923	194	110	140	128	178	212	280	226	248	316	230	142	2,404
Total	1919-1923	738	680	790	795	895	1,097	1,349	1,340	1,221	1,443	1,190	674	12,412
Dysentery	1919	526	531	605	696	620	648	1,038	947	718	706	716	583	8,334
	1920	410	285	361	399	338	367	575	677	538	478	439	405	5,212
	1921	363	265	342	331	323	381	608	605	698	525	500	415	5,616
	1922	807	484	581	469	540	584	761	763	610	561	519	470	7,169
	1923	384	330	401	413	445	653	638	777	709	611	494	411	6,266
Total	1919-1923	2,490	1,895	2,290	2,248	2,266	2,633	3,640	4,029	3,273	2,881	2,668	2,284	32,597
Diarrhoea	1919	804	336	501	554	583	540	839	715	603	516	477	350	6,318
	1920	295	249	415	341	362	361	433	459	425	303	282	248	4,173
	1921	192	228	327	299	304	376	566	611	459	373	320	274	4,329
	1922	233	225	399	338	413	375	501	461	329	362	385	266	4,357
	1923	208	186	344	376	320	329	511	446	261	303	239	222	3,745
Total	1919-1923	1,232	1,224	1,986	1,958	1,982	1,981	2,850	2,712	2,077	1,857	1,703	1,360	22,922

TO SECTION IV.—PRISONERS—*contd.*

APPENDIX TO

Years	Average annual strength †	INFLUENZA.				'CHOLERA.				SMALL-POX.				ENTERIC FEVER.			
		ACTUALS.		RATIOS.		ACTUALS.		RATIOS.		ACTUALS.		RATIOS.		ACTUALS.		RATIOS.	
		Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.
103,117	191	3	1.9	.03	67	24	.7	.33	38	2	.4	.02	111	30	1.1	.29	
110,930	519	1	4.7	.01	46	20	.4	.26	26	2	.2	.02	117	19	1.1	.17	
104,803	191	...	1.7	...	78	35	.7	.31	35	2	.3	.02	159	37	1.4	.32	
105,264	241	4	2.3	.04	101	40	1.0	.38	22	3	.2	.03	81	25	.8	.24	
107,359	28,871	1,862	259.6	18.46	101	40	.9	.37	59	5	.5	.05	95	28	.9	.26	
115,499	8,006	445	69.3	8.85	279	140	2.4	1.21	155	21	1.3	.18	65	16	.6	.14	
106,951	6,733	304	63.0	2.84	30	18	.3	.17	17	3	1.1	.05	105	36	1.0	.34	
110,523	5,247	201	47.5	1.82	113	54	1.0	.49	43	3	.4	.03	103	26	.9	.24	
120,332	3,162	153	26.4	1.20	117	62	1.0	.52	41	4	.3	.03	230	30	1.0	.32	
110,458	1,458	9	12.2	.08	10	6	.08	.05	56	1	.5	.08	163	36	1.4	.3	

Years.	RESPIRATORY DISEASES.				DYSENTERY.			
	ACTUALS.		RATIOS.		ACTUALS.		RATIOS.	
	Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.
	2,624	85	25.7	.83	6,130	266	60.1	2.62
	3,350	91	30.2	.82	6,804	302	61.3	2.72
	3,451	90	30.2	.79	6,934	348	60.8	3.05
	3,436	84	32.6	.80	5,840	258	55.5	2.45
	3,516	121	32.8	1.13	7,728	381	72.0	3.55
	3,347	108	30.7	.94	8,334	435	72.2	4.20
	3,311	78	31.0	.69	5,212	250	48.7	2.37
	3,321	81	30.0	.73	5,616	223	50.8	2.02
	3,864	76	32.1	.63	7,169	521	50.6	4.33
	3,785	70	31.7	.50	5,581	197	46.7	1.6

† Excluding

SECTION IV.—PRISONERS—*contd.*

MALARIA.				PYREXIA OF UN- CERTAIN ORIGIN.				TUBERCLE OF THE LUNGS.				PNEUMONIA.			
ACTUALS.		RATIOS.		ACTUALS.		RATIOS.		ACTUALS.		RATIOS.		ACTUALS.		RATIOS.	
Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.
11,980	75	127·3	·73	1,901	6	18·6	·05	1,002	357	9·8	3·50	1,105	250	10·8	2·4
14,651	89	132·1	·89	1,795	8	16·2	·07	945	336	9·5	3·02	1,433	342	11·0	3·0
17,518	94	153·6	·82	2,442	3	21·4	·03	1,031	384	9·0	3·37	1,267	307	11·1	2·0
20,231	80	192·2	·76	1,533	4	14·6	·04	1,142	386	10·8	3·67	1,328	343	12·6	3·2
18,378	94	171·2	·88	1,725	7	16·1	·06	1,323	400	12·3	3·73	1,816	559	16·9	5·2
22,849	122	197·8	1·06	1,794	8	15·5	·07	1,093	360	9·5	3·12	1,572	416	13·6	3·6
19,971	96	186·7	·90	2,132	2	19·9	·02	1,053	319	9·8	2·98	1,341	322	12·5	3·0
22,837	92	206·6	·83	2,385	7	21·6	·06	1,041	342	9·4	3·09	1,519	378	13·7	3·42
24,636	102	204·7	·85	3,697	13	30·7	·11	1,060	325	8·8	2·70	1,618	415	13·4	3·45
23,728	102	198·5	·9	2,404	3	20·1	·03	997	336	8·9	2·78	1,591	350	13·3	2

DIARRHŒA.				ANÆMIA AND DEBILITY.			
ACTUALS.		RATIOS.		ACTUALS.		RATIOS.	
Admissions.	Deaths.	Admission rates.	Death rates.	Admissions.	Deaths.	Admission rates.	Death rates.
3,832	62	37·5	·61	1,205	27	11·8	·26
4,519	88	40·7	·79	1,556	34	14·0	·31
5,023	82	44·0	·72	1,097	45	9·6	·39
4,804	64	45·6	·61	1,236	38	11·7	·36
5,660	97	52·7	·90	1,560	59	14·5	·55
6,818	148	54·7	1·38	938	48	8·1	·42
4,173	71	39·0	·65	795	29	7·4	·27
4,329	56	39·2	·51	647	49	5·9	·36
4,357	54	36·2	·45	758	30	6·3	·25
3,498	48	29·3	·40	737	20	6·2	·17

Andamans.

APPENDIX TO SECTION IV.—PRISONERS

E.—Statistics of convicts only. Ad.—Admission rates. D.—Death rates.			1919.			1920.			1921.			1922.			1923.		
			Average strength.	RATIO PER 1,000 OF STRENGTH.		Average strength.	RATIO PER 1,000 OF STRENGTH.		Average strength.	RATIO PER 1,000 OF STRENGTH.		Average strength.	RATIO PER 1,000 OF STRENGTH.		Average strength.	RATIO PER 1,000 OF STRENGTH.	
				Ad.	D.		Ad.	D.		Ad.	D.		Ad.	D.		Ad.	D.
Burma	Central	8,035	328.1	33.11	9,178	433.1	19.29	10,177	490.1	15.03	10,301	568.2	15.59	10,424	1,004.4	12.9	
	District	4,318	354.1	18.63	4,412	418.0	21.81	4,832	447.4	17.38	4,687	322.0	15.15	4,727	620.9	12.5	
Assam	Central	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	District	2,069	1,004.3	23.20	2,159	788.2	25.04	2,315	941.0	37.50	2,572	906.3	24.49	2,224	779.2	26.1	
Bengal	Central	6,112	1,180.8	17.83	6,005	805.5	11.12	6,057	901.1	14.36	6,139	1,053.0	16.29	5,936	821.4	16.0	
	District	7,131	1,672.1	28.80	4,834	2,194.0	40.13	6,153	1,408.0	13.35	6,372	1,439.9	21.07	5,358	1,491.2	16.1	
Bihar and Orissa	Central	3,654	1,333.8	43.25	3,464	622.6	29.10	2,637	1,144.5	40.54	3,045	1,041.1	23.07	3,429	1,121.3	26.0	
	District	4,024	1,161.4	50.20	3,317	942.7	20.34	2,359	1,181.0	27.45	1,860	1,017.3	6.05	1,592	884.4	8.2	
United Provinces	Central	12,711	513.0	28.09	10,682	495.9	15.44	10,946	402.0	15.80	11,390	555.2	13.70	11,723	469.1	11.8	
	District	13,793	519.0	22.33	11,157	671.4	17.75	11,039	707.9	25.73	11,003	657.3	14.53	12,906	617.1	14.9	
Panjab	Central	7,334	1,301.5	22.50	6,791	946.8	13.40	6,708	1,143.0	16.40	7,833	990.0	11.78	8,126	962.5	12.6	
	District	5,692	757.9	24.60	5,106	580.8	18.47	5,702	687.8	19.47	7,579	916.0	12.53	7,450	862.8	17.3	
North-West Frontier Province	Central	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	District	1,833	651.4	20.19	2,064	614.3	20.85	2,141	1,006.3	21.40	2,791	1,478.0	20.00	2,784	1,031.2	19.3	
Central Provinces	Central	2,754	293.4	13.80	2,755	331.5	26.50	2,955	400.7	42.21	2,635	393.7	18.15	2,055	463.5	25.3	
	District	1,157	490.9	32.84	1,024	453.1	22.46	1,164	454.1	26.86	1,539	325.4	24.71	2,010	345.8	15.9	
Bombay	Central	4,541	1,035.0	18.94	4,303	1,392.7	19.09	4,401	803.2	18.01	4,140	733.3	6.44	3,947	830.8	11.9	
	District	7,004	825.3	27.58	6,898	710.3	19.51	6,770	6,002.8	32.16	6,400	792.0	18.44	5,782	680.2	11.8	
Madras	Central	9,269	531.1	41.84	9,345	419.9	22.15	9,766	395.0	24.81	15,743	535.7	51.33	16,620	32.5	17.0	
	District	2,160	743.5	31.02	2,304	512.9	20.47	2,407	545.3	28.59	3,036	603.0	36.23	2,554	516.1	9.4	
Total of the above Provinces	Central	54,710	770.1	38.82	54,723	659.0	18.13	53,815	671.1	19.59	61,221	688.5	24.04	62,265	677.5	53.3	
	District	49,181	833.5	26.82	43,435	821.5	22.04	44,772	681.9	20.12	48,639	559.5	18.42	47,397	739.6	15.1	

APPENDIX TO SECTION IV.—PRISONERS—*cont.*

F.—Statistics of convicts only. Arranged according to duration of confinement.		Not exceeding six months.	Above six months and not exceeding one year.	Above one year and not exceeding two years.	Above two years and not exceeding three years.	Above three years and not exceeding seven years.	Above seven years.	Total.	
1919.	District Jails	Strength	24,509	11,702	7,680	3,163	2,061	536	49,673
		Deaths	857	243	114	39	57	9	1,319
		Ratio per 1,000 of strength .	34.97	20.77	14.84	12.33	27.39	16.73	26.75
	Central Jails	Strength	17,108	10,492	8,972	7,698	6,708	3,642	54,626
		Deaths	597	291	249	147	229	64	1,577
		Ratio per 1,000 of strength .	34.90	27.74	27.75	19.10	34.14	17.57	28.87
1920.	District Jails	Strength	22,759	10,807	6,761	2,953	1,862	433	45,575
		Deaths	588	209	96	32	39	19	933
		Ratio per 1,000 of strength .	25.84	19.34	14.20	10.84	20.95	43.88	21.57
	Central Jails	Strength	16,852	10,507	8,726	6,791	6,316	3,705	52,900
		Deaths	341	303	200	97	124	27	992
		Ratio per 1,000 of strength .	20.23	19.32	22.92	14.28	19.68	7.29	18.75
1921.	District Jails	Strength	23,210	10,524	6,612	2,733	1,920	463	45,471
		Deaths	604	186	132	33	40	14	1,009
		Ratio per 1,000 of strength .	26.01	17.67	19.96	12.07	20.83	20.24	22.19
	Central Jails	Strength	17,395	10,299	9,346	7,128	6,261	3,761	54,190
		Deaths	398	157	233	95	188	33	1,054
		Ratio per 1,000 of strength .	22.86	15.24	24.98	13.33	22.04	8.77	19.45
1922.	District Jails	Strength	24,953	11,391	6,629	3,063	2,408	653	49,097
		Deaths	513	156	93	53	59	22	896
		Ratio per 1,000 of strength .	20.56	13.70	14.03	17.30	24.50	33.69	18.25
	Central Jails	Strength	18,868	12,459	10,324	7,661	6,604	5,167	61,096
		Deaths	782	251	153	95	138	33	1,472
		Ratio per 1,000 of strength .	41.40	20.15	14.83	12.40	20.90	10.28	24.09
1923.	District Jails	Strength	22,327	11,028	7,025	3,259	2,787	1,130	47,556
		Deaths	365	129	107	50	54	18	716
		Ratio per 1,000 of strength .	16.3	11.1	15.2	15.3	19.4	15.9	15.1
	Central Jails	Strength	17,144	11,797	13,263	8,955	6,958	4,884	62,401
		Deaths	256	180	202	89	149	64	948
		Ratio per 1,000 of strength .	15.0	15.3	15.2	10.7	21.4	13.1	15.2

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Appendix to Section V.

VACCINATION.

APPENDIX TO SECTION V.—VACCINATION.

Statement No. 1.—Total Primary Vaccinations, and Re-vaccinations, successful cases among children, cost of the Special Vaccination Department, etc., during the official year 1923-24.

Province.	Number of operations performed by the Special and Dispensary Staffs combined.		Percentage of successful cases* to total operations.		Number of children successfully vaccinated by the Special and Dispensary Staffs combined.		Average number of persons vaccinated by each vaccinator of the Special Staff.	Total cost of the Special Department.†			Average cost of each successful case vaccinated by the Special Department.			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Under one year.	1 to 6 years.		Rs.	A.	P.	Rs.	A.	P.	
Delhi	15,226	4,762	97·98	70·05	11,752	1,853	1,998	5,175	0	0	0	0	5	0
Bengal	1,590,576	467,148	95·9	56·8	305,742	989,178	1,249	4,27,735	0	0	0	0	8	9
Bihar and Orissa	1,001,650	41,614	99·49	65·44	375,928	595,352	786	1,52,980	0	0	0	0	2	4
Assam	813,594	71,985	95·78	59·32	61,845	193,937	849	86,374	0	0	0	0	4	5
United Provinces of Agra and Oudh.	1,251,387	58,761	91·53	63·70	810,651	285,068	1,400	3,87,344	0	0	0	0	4	10
Punjab	674,203	269,060	97·78	70·62	500,972	110,712	13,028	2,51,055	0	0	0	0	5	2
North-West Frontier Province .	108,837	19,363	97·96	87·66	62,112	34,263	53,756	20,754	0	0	0	0	2	9
Central Provinces and Berar . .	468,452	42,946	98·85	59·18	361,196	76,670	1,719	1,96,210	0	0	0	0	6	10
Madras	1,565,706	346,859	90·0	42·6	572,968	682,256	12,441	**7,63,893	0	0	0	0	8	9
Coorg	8,108	6,987	96·83	68·68	885	4,792	1,344	5,355	0	0	0	0	7	4
Bombay	631,923	112,271	99·72	47·81	432,734	119,837	482	6,48,353	0	0	0	1	1	1
Burma	548,875	209,910	98·37	46·86	151,744	267,140	72,196	3,43,262	0	0	0	0	3	8
Ajmer-Merwara	13,529	728	83·34	97·12	9,832	1,689	875	5,038	0	0	0	0	6	5
TOTAL	8,182,066	1,652,394	95·66	57·83	3,653,361	13,312,642	1,239	32,63,528	0	0	0	0	6	4

* Excluding those the results of which were not known.

† Including vaccinations performed in cantonments.

‡ Excludes average of work done by Medical Subordinates.

** Excluding Madras Presidency Circle.

† Excluding dispensaries.

§ Including vaccinations performed in cantonments and political agencies.

¶ Excludes the work done by private Medical practitioners.

APPENDIX TO SECTION V.—VACCINATION—contd.

Statement No. II.—Vaccination operations performed by the Special and Dispensary Establishments separately, deaths from small-pox, etc., during the official year 1923-24.

Province.	Population.	NUMBER OF OPERATIONS (PRIMARY AND RE-VACCINATIONS COMBINED).			Ratio of successful vaccinations per 1,000 of population.	Percentage of annual estimated births at 40 per 1,000 of population successfully vaccinated.	DEATHS FROM SMALL-POX.*	
		By Special Department.	By Dispensary Staff.	TOTAL.			Number.	Ratio per 1,000 of population.
Delhi	500,539	19,988	...	19,988	32·87	58·70	67	·13
Bengal	†44,505,606	1,883,054	174,670	2,057,724	38·3	17·17	4,236	·1
Bihar and Orissa	34,002,189	1,042,922	342	1,043,264	29·73	27·64	3,161	·09
Assam	7,985,934	363,480	2,099	365,579	41·93	19·36	3,213	·47
United Provinces of Agra and Oudh	45,375,787	1,309,636	512	1,310,148	25·57	44·66	747	·02
Punjab	20,648,126	942,393	870	943,263	37·75	60·65	2,140	0·10
North-West Frontier Province	3,256,965	128,107	93	128,200	36·51	47·68	94	0·04
Central Provinces and Berar	13,912,760	501,288	110	501,398	33·12	64·90	275	·02
Madras	†42,227,551	1,912,968	197	1,912,565	33·4	33·92	24,434	0·6
Coorg	163,838	14,912	183	15,095	72·05	13·50	18	0·11
Bombay	20,812,763	734,323	9,871	744,194	27·79	51·98	2,811	0·15
Burma	13,169,099	752,447	6,398	758,785	45·62	23·81	2,846	·26
Ajmer-Merwara	495,271	14,257	...	14,257	24·86	49·63	42	·08
TOTAL	247,056,428	9,639,175	195,285	9,834,460	38·59	37·02	44,034	·18

* For the Calendar year.
 † Excludes the population of all Municipalities except Calcutta.
 ‡ Excludes the population of the Cantonments of Bangalore and Secunderabad.

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APPENDIX TO SECTION V.—VACCINATION—*contd.*

Statement No. III.—Vaccination in the European and Indian Armies during 1923.

Effective strength.

	EUROPEAN TROOPS.								INDIAN TROOPS.							
	OFFICERS.				WARRANT AND NON-COMMISSIONED OFFICERS AND MEN.				EUROPEAN OFFICERS.				INDIAN COMMISSIONED, NON-COMMISSIONED OFFICERS AND MEN.			
	Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.	
	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.
Northern Command . . . . .	...	75	...	77	7	2,800	86	70	...	12	...	50	630	12,847	78	70
Western „ . . . . .	...	24	...	87	1	1,288	100	65	...	88	...	55	366	9,991	67	69
Eastern „ . . . . .	...	81	...	69	89	3,949	78	89	...	83	...	64	1,108	17,920	81	38
Southern „	4	77	100	61	31	2,949	90	42	...	46	...	33	591	9,716	63	42
Burma Independent District . . . . .	...	5	...	60	...	84	...	65	...	4	...	...	440	1,971	74	49
Waziristan District . . . . .	...	3	...	100	...	52	...	62	...	...	...	...	...	1,729	...	50
Extra India . . . . .	...	1	...	100	...	448	...	19	...	...	...	...	...	133	...	76
TOTAL	4	266	100	71	128	11,520	81	50	...	138	...	47	3,135	54,807	75	53

APPENDIX TO SECTION V.—VACCINATION—*contd.*

Non-effective strength—Families.

A.—European Troops.

	OFFICERS' WIVES.				OFFICERS' CHILDREN.				SOLDIERS' WIVES.				SOLDIERS' CHILDREN.			
	Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.	
	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.
Northern Command	5	80	100	93	38	11	82	91	...	123	...	84	277	142	84	84
Western „ . . . . .	...	12	...	83	5	7	60	100	1	38	100	63	81	9	75	78
Eastern „ . . . . .	...	21	...	71	20	6	95	17	8	142	67	60	274	104	76	49
Southern „	1	53	100	70	29	31	83	68	31	142	77	56	265	185	89	75
Burma Independent District . . . . .	...	1	...	100	3	1	100	100	1	12	100	42	84	25	94	52
Waziristan District . . . . .	...	2	...	100	...	...	...	...	...	...	...	...	1	...	100	...
Extra India . . . . .	...	...	...	...	...	...	...	...	...	7	...	29	14	7	100	100
TOTAL	6	119	100	78	95	56	84	72	41	464	80	62	946	472	83	71

APPENDIX TO SECTION V.—VACCINATION—*concl.*

Non-effective strength—Families.

B.—Indian Troops.

	EUROPEAN OFFICERS' WIVES.				EUROPEAN OFFICERS' CHILDREN.				INDIAN SOLDIERS' WIVES.				INDIAN SOLDIERS' CHILDREN.			
	Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.		Number.		Percentage of successful cases to total operations.	
	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.	Primary.	Revaccination.
Northern Command . . . . .	...	...	...	..	10	2	90	100	...	41	...	51	79	2	53	...
Western " . . . . .	...	5	...	100	4	1	100	100	...	1	...	...	15	8	80	...
Eastern " . . . . .	...	6	...	83	5	2	100	100	19	136	79	76	119	40	90	85
Southern "	1	10	100	70	9	4	89	75	...	18	...	15	11	...	100	...
Burma Independent District . . . . .	...	1	...	...	6	...	100	...	...	...	...	...	...	...	...	...
Waziristan District . . . . .	...	...	...	...	3	...	100	...	...	...	...	...	...	...	...	...
Extra India . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL	1	22	100	77	37	9	95	89	19	191	79	66	224	45	77	76

Appendix to Section VIII.

MEDICAL RESEARCH.

APPENDIX TO SECTION VIII.

List of Scientific Papers on Research written by the Research Workers under the Government of India, the Indian Research Fund Association and Provincial Governments and published during the year 1923.

I.—Papers published in the Indian Journal of Medical Research.

Anderson, L. A. P.

(1) A note on a case of Dextrocardia in the mouse (Volume X, No. 4, pages 1117-1118).

(2) A note on a method of fumigation by Hydrocyanic Acid gas on a small scale. (Volume X, No. 4, pages 1119-1122).

Barrand, P. J.

(1) A Revision of the Culicinemosquitoes of India. Part I. (Volume X, No. 3, pages 772-788).

(2) A Revision of the Culicine mosquitoes of India. Part II. (Volume X, No. 4, pages 934-942).

(3) A Revision of the Culicine mosquitoes of India. Part III. (Volume XI, No. 1, pages 214-219).

(4) A Revision of the Culicine mosquitoes of India. Part IV. (Volume XI, No. 1, pages 220-223).

(5) A Revision of the Culicine mosquitoes of India. Part V. (Volume XI, No. 1, pages 224-228).

(6) A Revision of the Culicine mosquitoes of India. Part VI. Some Indian species of the genus *Finlaya* Theo., adult stage (Volume XI, No. 2, pages 475-494).

(7) A Revision of the Culicine mosquitoes of India. Part VII. The Larvae of some species of *Stegomyia* Theo. The Larvae of some species of *Finlaya* Theo. The Larva of *Christophersomyia Thomsoni* Theo. The Larva of *Mimomyia Chamberlaini* Ludl. The Larva of *Aedomyia catasticta* Knab. (Volume XI, No. 2, pages 495-506).

(8) Two new species of *Culex* (Diptera, Culicidae) from Assam. (Volume XI, No. 2, pages 507-510).

Brahmachari, U. N.

(1) Chemotherapy of antimonial compounds in Kala-azar infection. Part II. (Volume X, No. 4, pages 948-952).

(2) Chemotherapy of antimonial compounds in Kala-azar infection: Further observations on the toxicity of antimonial compounds—Delayed antimony poisoning. Part III. (Volume XI, No. 1, pages 196-213).

(3) Chemotherapy of antimonial compounds in Kala-azar infection: Part IV. Further observations on the therapeutic values of Urea Stibamine. (Volume XI, No. 2, pages 393-404).

(4) Chemotherapy of antimonial compounds in Kala-azar infection: Part V. Amino-Antimonyl Tartrates. (Volume XI, No. 2, pages 405-410).

(5) Chemotherapy of antimonial compounds in Kala-azar infection: Part VI. Cumulative and tolerance experiments with tartar emetic. (Volume XI, No. 2, pages 411-416).

Brahmachari, U. N., Das, J., Sen, P. B.

(1) Chemotherapy of antimonial compounds in Kala-azar infection. Part VII. The estimation of small quantities of antimony in presence of organic matter. (Volume XI, No. 2, pages 417-420).

Caius, J. F., and Mhaskar, K. S.

(1) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XVII. Antiseptics. (Volume XI, No. 1, pages 92-102).

(2) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XVIII. Cathartics. (Volume XI, No. 1, pages 103-109).

(3) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XIX. Drugs allied to Thymol. (Volume XI, No. 2, pages 337-346).

(4) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XX. Carbon Tetrachloride. (Volume XI, No. 2, pages 347-352).

(5) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XXI. Miscellaneous Anthelmintics. (Volume XI, No. 2, pages 353-370).

(6) The Correlation between the chemical composition of Anthelmintics and their therapeutic values in connection with the Hookworm enquiry in the Madras Presidency. Section XXII. Summary and Conclusions. (Volume XI, No. 2, pages 371-376).

(7) Notes on Ascaricides. (Volume XI, No. 2, pages 377-392).

Caius, J. F. and Iyengar, K. R. K.

(1) Notes on the concentration of Anti-cobra Serum. I. Concentration in vacuo and dilution. (Volume XI, No. 2, pages 601-610).

Cragg, F. W.

(1) Further records of the distribution of Indian rat fleas, with a note on the correlation between the prevalence of *Xenopsylla cheopis* and plague mortality. (Volume X, No. 4, pages 953-961).

(2) The Zoophilism of *Anopheles* in relation to the epidemiology of Malaria in India. A Suggestion. (Volume X, No. 4, pages 962-964).

(3) Observations on the bionomics of the Bed-Bug, *Cimex lectularius* L., with special reference to the relations of the sexes. (Volume XI, No. 2, pages 449-474).

Cragg, F. W. and Swaminath, C. S.

(1) Some observations on the bionomics of *Xenopsylla astia*, Rothsch. (Volume X, No. 4, pages 979-989).

Howard, A., Simonsen, J. L., and Anderson, L. A. P.

- (1) A preliminary note on Lathyrism. (Volume X, No. 3, pages 857-860).

Mackie, F. P., Das Gupta, B. N. and Swaminath, C. S.

- (1) Progress report on Kala-azar. (Work carried out in Shillong between June and November, 1921). (Volume XI, No. 2, pages 591-600).

Malone, R. H.

- (1) A fallacy in the use of Benian's 'relief' stain associated with the growth of micro-organisms in two per cent. aqueous solution of Congo-red. (Volume X, No. 3, pages 847-849).

- (2) On certain fallacies associated with the use of laboratory animals for isolating pathogenic micro-organisms. (Volume X, No. 4, pages 1123-1126).

- (3) A method of estimating the degree of solubility of micro-organisms in bile and 'bile salt' solutions. (Volume X, No. 4, pages 1144-1146).

McCarrison, R.

- (1) Pathogenesis of Deficiency Disease. Part XII. Concerning the function of the Adrenal Gland and its relation to Concentration of Hydrogenions. (Abstract read Indian Science Congress, Lucknow, 1923). (Volume X, No. 4, pages 861-899).

- (2) Pathogenesis of Deficiency Disease. Part XIII. Effects of Heat, Cold, Serum and Sunlight on the action of Epinephrin and Adrenalin Hydrochloride. (Volume X, No. 4, pages 900-907).

- (3) Pathogenesis of Deficiency Disease. No. XI. Observations on Fat-excess in relation to Iodine requirements and to the Thyroid glands. (Volume XI, No. 1, pages 1-51).

- (4) Pathogenesis of Deficiency Disease. No. XIV. On the occurrence of Ophthalmia in pigeons fed exclusively on parboiled rice and on its prevention by the addition of soil to the food. (Volume XI, No. 2, pages 323-336).

Mhaskar, K. S.

- (1) The Diagnosis of Hookworm infection (Read Indian Science Congress). (Volume X, No. 3, pages 665-686).

- (2) A Note on the correlation between Humidity and the intensity of Hookworm infection in Southern India. (Read Indian Science Congress). (Volume X, No. 3, pages 821-824).

Mhaskar, K. S. and Kendrick, J. F.

- (1) Anti-Hookworm campaign in the tea estates of Madras. (Volume XI, No. 1, pages 52-64).

- (2) A Note on the interval for retreatment of Hookworm infection. (Volume XI, No. 1, pages 234-36).

Muir, E.

- (1) The spread of Leprosy throughout the body from initial lesions. (Volume XI, No. 1, pages 239-295).

- (2) The treatment of Leprosy in the light of the nature of its spread through the body. (Volume XI, No. 2, pages 543-578).

Muir, E., Lloyd, R. B., and Mitra, G. C.

- (1) The Wassermann reaction in Leprosy. (Volume XI, No. 1, pages 229—233).

Shortt, H. E.

- (1) *Herpetomonas ctenocephali*, Fantham: some observations on its life-history and reactions to different environments. (Volume X, No. 3, pages 721—738).
 (2) Note on Iron Haematoxylin staining. (Volume X, No. 3, page 836).
 (3) The pathogenicity of insect flagellates to vertebrates, with special reference to *Herpetomonas ctenocephali*, Fantham. (Volume X, No. 4, pages 908—933).
 (4) Record of Kala-azar research work carried out at the King Edward VII Memorial Pasteur Institute, Shillong, during 1922. (Volume X, No. 4, pages 1150—1168).
 (5) The Pathology of acute experimental Kala-azar in monkeys. (Volume XI, No. 1, pages 186—195).
 (6) The Recovery of *Herpetomonas donovani* from the urine of a Kala-azar patient. (Volume XI, No. 1, pages 319—320).

Shortt, H. E. and Sen, R. T.

- (1) Urea Stibamine in the treatment of Kala-azar. (Volume XI, No. 2, pages 653—660).

Shortt, H. E., Swaminath, C. S., and Sen, R. T.

- (1) A second report on the recovery of *Herpetomonas donovani* from the urine of Kala-azar cases. (Volume XI, No. 2, pages 667—668).

Sinton, J. A.

- (1) Notes on some Indian species of the Genus *Phlebotomus*, Part I. (Volume X, No. 3, pages 742—753).
 (2) Results of some experiments in the treatment of Malaria with alkali combined with quinine (Preliminary Note). (Volume X, No. 3, pages 850—856).
 (3) Notes on some Indian species of the Genus *Phlebotomus*, Part II. *Phlebotomus squamipleuris* Newstead, 1912. (Volume XI, No. 1, pages 65—78).

II.—Papers published in the Indian Medical Gazette during 1923.

VOLUME LVIII.

Major H. W. Acton, I.M.S.

- (1) Medical Research, its aims and economic value. (Being the Presidential address at the Medical Research Section of the Indian Science Congress, January 1923).—(I. M. G. page 124).
 (2) The Influence of the Substrate on the action of Drugs.—(I. M. G. page 268).

Major H. W. Acton, I.M.S. and Major R. N. Chopra, I.M.S.

- (1) The Causation of Asthma and its Treatment.—(I. M. G. page 863).

Dr. U. N. Brahmachari, M.A., M.D., Ph. D., Rai Bahadur.

(1) Some new Amino-Antomonyl Tartrates and their therapeutic value. (A paper read at a meeting of the Medical Section of the Asiatic Society of Bengal on December 13, 1922).—(I. M. G. page 129).

(2) The Excretion of Antimony. (A paper read at a meeting of the Medical Section of the Asiatic Society of Bengal on May 9th, 1923).—(I. M. G. page 350).

Dr. U. N. Brahmachari, M.A., M.D., Ph. D., Rai Bahadur, and Parimal Bikash Sen, M.Sc.

- (1) The Globulin opacity test for Kala-azar.—(I. M. G. page 295).

Major R. N. Chopra, M.A., M.D. (Cantab.), I.M.S. and Dr. L. E. Napier, M.R.C.S., L.R.C.P. (London).

- (1) The Therapeutics of Antimony.—(I. M. G. page 1).

Ditto, and Dr. B. N. Ghosh, F.R.F.P.S. (Glasgow).

- (1) The Field for research in Indian Indigenous Drugs.—(I. M. G. page 99).

Ditto, Dr. Sudhamoy Ghosh, M.A., D.Sc., F.R.S. (Edinburgh), Dr. B. N. Ghosh, F.R.F.P.S. (Glasgow) and Dr. P. De, M.B. (Calcutta).

- (1) The pharmacology and therapeutics of Boerhaavia diffusa (Punarnava).—(I. M. G. page 203).

Ditto, and Dr. J. Borland McVail, M.R.C.S. (England), L.R.C.P. (London).

- (1) Carbon Tetrachloride in pharmacology and therapeutics.—(I. M. G. page 453).

Major R. Knowles, I.M.S., Dr. L. E. Napier, M.R.C.S., L.R.C.P. and Sub-Assistant Surgeon, B. M. Das Gupta.

(1) A preliminary note on the relationship of the intestinal protozoa of man to the Hydrogen Ion Concentration of their environment. (A paper read at the Indian Science Congress, Lucknow, January 1923).—(I. M. G. page 151).

- (2) The Kala-azar transmission problem.—(I. M. G. page 321).

Ditto, Major H. W. Acton, I.M.S. and Sub-Assistant Surgeon, B. M. Das Gupta.

- (1) A Note upon spleen puncture findings in Malaria.—(I. M. G. page 211).

Ditto Major R. N. Chopra, I.M.S., Assistant Surgeon J. C. Gupta and Sub-Assistant Surgeon B. M. Das Gupta.

- (1) Notes on some cases of Framboesia.—(I. M. G. page 470).

Dr. E. Muir, M.D., F.R.C.S. (Edinburgh).

- (1) Some notes on the treatment of Leprosy.—(I. M. G. page 38).
- (2) Some notes on the transmission of Leprosy.—(I. M. G. page 572).

Major H. E. Shortt, I.M.S. and Assistant Surgeon R. T. Sen.

- (1). Clinical Kala-azar work performed at the special Kala-azar hospital, Shillong, during 1922.—(I. M. G. page 289).

Major J. A. Sinton, M.D., I.M.S.

- (1) The treatment of Malaria by Quinine in combination with Magnesium Sulphate and alkali.—(I. M. G. page 406).
- (2) The occurrence of *Balantidium Coli* in the faeces of an Indian.—(I. M. G., page 432).

**Annual Report of the Public
Health Commissioner with
the Government of India
For 1923**

VOLUME II

**ANNUAL RETURNS OF SICKNESS AND
MORTALITY AMONG EUROPEAN
TROOPS, INDIAN TROOPS, FOLLOWERS
AND THE JAIL POPULATION.**

Returns relating to the European and Indian Armies and Followers compiled in the Office of the Director, Medical Services in India, and those relating to Prisoners in the Office of the Public Health Commissioner with the Government of India.

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NOTE.—In the tables for European troops, Indian troops, and for prisoners the months mentioned are calendar months.

TABLE A.

Grouping of Diseases in the Main Tables for 1923.

HEAD OF DISEASE.	Includes or includes also
HEAT-STROKE	Sun-stroke and Heat exhaustion.
ALCOHOLISM	Delirium Tremens and Alcoholic Poisoning.
OTHER RESPIRATORY DISEASES	All respiratory diseases except Pulmonary Tuberculosis and Lobar Pneumonia.
ANÆMIA	Old age (Tables for men and women). Premature birth (Tables for children).
HEPATIC CONGESTION AND INFLAMMATION.	Congestion of liver, Hepatitis, Perihepatitis, but excludes Cirrhosis of liver and abscess of liver.
VENEREAL DISEASES	Syphilis, Soft Sore and Gonorrhœa.
ABORTION AND AFFECTIONS CONNECTED WITH PREGNANCY.	Nomenclature of diseases (1918 Edition), pages 121—123.
AFFECTIONS CONNECTED WITH AND CONSEQUENT ON PARTURITION.	Nomenclature of diseases (1918 Edition), pages 123—126.
ALL OTHER DISEASES PECULIAR TO WOMEN.	Nomenclature of diseases (1918 Edition), pages 112—121.

I.—EUROPEAN TROOPS, 1923.

TABLE B.

STATIONS BY COMMANDS AND INDEPENDENT DISTRICTS.

STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.	STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.	STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.
NORTHERN COMMAND—				NORTHERN COMMAND— <i>contd.</i>				EASTERN COMMAND— <i>contd.</i>			
Abbottabad . . .	4,010	S. D.	Map.	Subathu . . .	4,000	S. D.	Map.	Lucknow (Kalubir's)	383	S. D.	B. M.
Ali Masjid Fort . .	3,174	"	"	Thal . . .	2,450	"	"	Meerut . . .	737	"	S. B. M.
Ambala . . .	902	"	S. B. M.	Upper Topa . . .	7,000	M. O.	"	Muttra . . .	560	"	"
Amritsar . . .	754	"	"	WESTERN COMMAND—				Naini Tal Convalescent Depôt.	6,400	"	"
Attock . . .	1,122	"	"	Ahmedabad . . .	162	S. D.	S. B. M.	Ranikhet . . .	5,980	"	"
Barian Camp and Khyragali.	7,133	I. B.	"	Asad Khel . . .	4,000	"	New Camp.	Chaubatia . . .	6,942	S. G.	"
	7,678	S. D.	Map.	Bannu . . .	1,250	"	Map.	Roorkee . . .	879	S. D.	S. B. M.
Campbellpore . . .	1,180	"	"	Dardoni . . .	3,036	"	"	Sitapur . . .	447	"	"
Cherat . . .	4,546	"	"	Deesa . . .	466	"	"	SOUTHERN COMMAND—			
Dagshai . . .	6,087	"	"	Dera Ismail Khan . .	568	"	S. B. M.	Ahmednagar . . .	2,180	"	Map.
Dalhousie Convalescent Depôt.	7,687	"	"	Hyderabad (Sind) . .	96	"	"	Bahugarh (Hapur) Re Depot.	675	"	"
Ferozepore . . .	649	"	S. B. M.	Idak . . .	2,477	"	Map.	Bangalore . . .	3,002	"	S. B. M.
Gharial . . .	6,811	S. G.	"	Jandola . . .	2,274	"	"	Belgaum . . .	2,523	"	"
Fort Jamrud (Highest Tower).	607	S. D.	Ht. Tower.	Kalabagh and Mari Indus.	682	"	"	Bellary . . .	1,481	"	"
Jhelum . . .	762	"	S. B. M.	Karachi Holy Trinity Church.	28	"	S. B. M.	Colaba (Bombay) (Town Hall).	20	"	S. B. M.
Jullundur Cantonment.	771	"	B. M.	Khirgi . . .	1,835	"	Map.	Deolali . . .	1,894	"	"
				Kotkai . . .	5,140	"	"	Jhansi . . .	849	"	"
				Loralai . . .	4,699	"	"	Jubbulpore . . .	1,320	"	"

EUROPEAN TROOPS, 1923.

Jutogh	6,370	"	Map.	Manzal	1,650	"	"	Kamptee (Ry. Station).	940	"	B. M.
Kalabagh and Baragali.	7,963	"	"	Mount Sanatorium. Abu Nasirabad	3,836	"	...	Kirkee	1,855	"	S. B. M.
Kasauli Convalescent Depôt.	6,050	"	...	Piazha Raghza	4,900	"	Map.	St. Thomas' Mt. (Ry. Station). Madras (Obsy.)	34	"	B. M.
Kohat	1,725	"	Map.	Quetta	5,510	"	S. B. M.	Malapuram Ry. Station. Mhow (Ry. Station)	1,380	G. T.	B. M.
Khanspur and Ghora Dhaka	7,721	"	...	Razmak	6,556	"	Map.	Neemuch	1,613	"	"
Kuldana	7,049	S. G.	...	Razani	5,750	"	"	Nowgong	735	"	Map.
Lahore Cantonment and Fort.	706	S. D.	S. B. M.	Sora Rogha	5,543	"	"	Pachmarhi	3,490	"	"
Landi Kotal	3,509	"	Map.	Tank	880	"	"	Poona	1,867	"	S. B. M.
Mona	Not available.			EASTERN COMMAND—				Purandhar	4,560	"	...
Multan	404	S. D.	S. B. M.	Agra (Fort)	525	"	S. B. M.	Satara	2,203	"	S. B. M.
Murree Convalescent Depôt.	7,073	"	Map.	Allahabad and Fort	314	"	"	Saugor	1,755	"	"
Nowshera (Ry. Station).	966	"	B. M.	Bareilly	563	"	"	Secunderabad	1,776	"	"
Peshawar	1,152	"	S. B. M.	Barrackpore	24	"	...	Wellington Stn. Hospital	5,800	"	Map.
Rawalpindi	1,689	"	"	Benares	256	"	S. B. M.	BURMA INDEPENDENT DISTRICT—			
Risalpur	1,014	"	B. M.	Cawnpore	407	"	B. M.	Mandalay (Fort Dufferin).	246	"	...
Sargodha Ry. Rest House.	6.5	"	"	Chakrata	6,885	"	Map.	Maymyo	3,508	"	Map.
Samana Ridge	6,613	"	Map.	Delhi	757	"	S. B. M.	Port Blair (Tidal Obsy.).	9	"	B. M.
Sialkot	820	"	B. M.	Dinapore	170	"	Church.	Rangoon (Custom House-flag Staff).	17	"	S. B. M.
Solon	5,078	B. M.	...	Fort William	17	S. G.	...	EXTRA INDIA—			
				Fyzabad	330	S. D.	S. B. M.	Aden (Near Port Engr. Office).	7	"	"
				Landour Convalescent Depôt.	7,528	G. T. S.	...				
				Lebong	6,000	S. D.	...				

S. D. = Survey Department.
 S. B. M. = Standard Bench Mark.
 B. M. = G. T. Bench Mark.
 Map. = Heights taken from Topo Maps.
 M. O. = Medical Officers in charge of Station Hospitals in their Sanitary Reports.
 I. B. = Intelligence Branch of the Division of the Chief of the Staff.
 S. G. = Surveyor-General of India.

TABLE I.

RATIOS BY COMMANDS AND INDEPENDENT DISTRICTS.

The ratios of admissions and deaths to strength are taken from Table III.

	RATIOS PER 1,000 OF THE AVERAGE STRENGTH.							INDIA.
	Northern Command.	Western Command.	Eastern Command.	Southern Command.	Burma District.	Waziristan District.	Aden Bdo.	
I.—STRENGTH	16,543	5,387	16,813	18,707	2,000	2,008	1,174	63,139
II.—CONSTANTLY SICK PER 1,000 OF THE AVERAGE STRENGTH	30'20	23'04	28'73	27'30	34'50	43'24	15'60	28'40
III.—ADMISSION RATE OF THE YEAR—								
Influenza	2'7	...	0'5	0'1	...	26'9	...	1'8
Cholera . . . . .	...	...	...	...	...	...	...	...
Small-pox	0'2	0'4	0'2	0'2	...	...	...	0'2
Enteric Group of Fevers	3'1	1'9	2'0	2'4	0'5	1'0	0'9	2'3
Malaria	343'8	87'6	105'8	54'0	53'5	585'2	21'3	172'2
Sandfly-Fever	68'1	2'8	21'4	4'8	...	47'8	94'5	28'6
Pyrexia of Uncertain Origin	0'1	0'2	0'7	0'6	...	0'5	...	0'6
Pulmonary Tuberculosis	1'3	0'6	1'2	1'1	1'0	1'0	0'9	1'1
Lobar Pneumonia	4'3	2'4	3'2	2'4	1'0	4'5	2'6	3'1
Other Respiratory Diseases	17'4	21'5	24'4	13'6	19'0	29'4	6'5	18'7
Dysentery	8'2	24'7	11'3	17'0	7'5	16'4	4'3	13'2

Diarrhoea	4'6	6'1	10'6	6'1	19'0	28'9	6'0	8'2
Hepatic { Abscess	0'4	0'6	0'3	0'3	...	0'5	...	0'3
{ Congestion and Inflammation	1'4	2'4	3'6	1'7	1'5	...	2'6	2'1
Venereal Diseases	56'8	71'7	72'3	£6'2	113'5	35'4	34'1	71'3
ALL CAUSES	733'8	441'4	579'0	484'3	645'5	1,140'9	366'3	595'4

IV.—DEATH RATE OF THE YEAR—

Cholera . . . . .	...	...	...	...	...	...	...	...
Small-pox	0'06	0'19	0'06	...	...	...	...	0'05
Enteric Group of Fevers	0'12	0'37	0'06	0'37	...	...	...	0'19
Malaria	0'24	...	0'24	0'32	0'50	1'00	...	0'27
Pyrexia of Uncertain Origin . . . . .	...	...	...	0'05	...	...	...	0'02
Heat-stroke	0'54	...	0'89	0'43	...	0'50	...	0'52
Circulatory Diseases	0'39	0'19	0'06	0'48	...	...	...	0'25
Pulmonary Tuberculosis	0'18	...	0'12	0'16	...	...	...	0'13
Lobar Pneumonia	0'36	0'19	0'18	0'05	...	0'50	...	0'19
Other Respiratory Diseases	0'12	...	0'18	0'05	...	0'50	...	0'11
Dysentery	0'24	...	0'06	0'16	...	...	...	0'13
Diarrhoea . . . . .	...	...	...	...	...	...	...	...
Hepatic Abscess	0'06	...	0'06	0'05	...	...	...	0'05
ALL CAUSES	3'51	2'41	3'51	4'28	2'00	7'47	0'85	3'75

EUROPEAN TROOPS, 1923.

TABLE II.

RATIOS OF GEOGRAPHICAL GROUPS.

The ratios of admissions and deaths to strength are taken from Table III.

	RATIOS PER 1,000 OF THE AVERAGE STRENGTH.												
	I Burma Coast and Bay Islands.	II Burma Inlands.	IV Bengal and Orissa.	V Gange- tic Plain and Chutia Nagpur.	VI Upper Sub- Hima- laya.	VII N.-W. Frontier, Indus Valley, and N.W. Rajpu- tana.	VIII S. E. Rajpu- tana, Central India and Gujarat.	IX Deccan.	X Western Coast.	XI South- ern India.	XIIa Hill Stations.	XIIIb Hill Conva- lescent Depôts and Sanato- ria.	India.
I.—STRENGTH	1,042	187	1,593	5,906	12,695	8,522	5,607	10,006	1,123	2,976	8,926	2,485	63,139
II.—† CONSTANTLY SICK PER 1,000 OF THE AVERAGE STRENGTH	36'57	37'22	68'03	26'93	30'90	31'83	17'51	28'73	35'05	31'47	21'40	31'20	28'40
III.—ADMISSION RATE OF THE YEAR—													
Influenza . . . . .	...	...	1'9	0'3	0'1	3'6	...	...	...	0'7	2'7	1'6	1'8
Cholera . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Small-pox . . . . .	...	...	...	0'2	0'2	0'6	0'4	0'1	0'9	0'3	...	...	0'2
Enteric Group of Fevers	1'0	...	1'3	2'9	2'6	1'9	2'3	1'6	0'9	5'7	1'9	4'0	2'3
Malaria	15'3	123'0	167'0	78'5	322'5	352'5	93'3	91'9	127'3	46'7	79'5	167'0	172'2
Sandfly Fever . . . . .	...	...	...	48'8	11'3	123'6	5'4	6'3	...	5'0	9'0	5'2	28'6
Pyrexia of Uncertain Origin . . . . .	...	...	...	1'7	0'1	0'2	0'5	0'8	...	0'3	...	...	0'6
Rheumatic Fever . . . . .	...	...	...	1'9	1'3	2'7	0'9	2'3	...	2'4	3'2	1'2	1'9
Tubercle of the Lungs	1'0	...	2'5	1'7	1'5	1'1	0'9	1'0	1'8	...	0'1	2'0	1'1
Pneumonia, Lobar	1'0	...	5'0	1'7	4'6	4'1	4'1	1'9	1'8	3'0	2'4	2'8	3'1
Other Respiratory Diseases	21'1	26'7	40'2	27'4	17'5	21'0	11'2	11'1	30'3	16'1	21'1	22'5	18'7

Dysentery	11.5	5.3	22.6	14.0	9.5	6.8	6.2	20.1	30.3	13.1	18.7	14.5	13.2
Diarrhoea	23.0	...	5.0	15.9	4.9	11.6	5.0	6.9	8.9	3.0	8.1	5.2	8.2
Hepatic { Abscess . . . . .	...	...	...	0.2	0.3	0.5	0.2	0.1	...	...	0.6	2.0	0.3
{ Congestion and Inflammation	1.9	5.3	6.3	1.4	2.7	1.3	3.6	1.5	1.8	2.0	2.0	1.6	2.1
Venereal Diseases	98.8	256.7	194.0	57.6	73.8	50.0	50.5	76.6	176.3	139.1	53.7	43.1	71.3
ALL CAUSES	632.8	1,080.2	1,048.3	608.2	679.3	853.2	352.9	485.9	795.2	546.0	439.3	539.2	595.4
IV. -DEATH RATE OF THE YEAR-													
Cholera . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Small-pox . . . . .	...	...	...	0.17	...	0.23	...	...	...	...	...	...	0.05
Enteric Group of Fevers . . . . .	...	...	...	...	0.08	0.12	0.18	0.30	...	1.00	0.22	0.40	0.19
Malaria	0.96	...	0.63	0.17	0.16	0.59	0.89	0.20	...	...	...	...	0.27
Pyrexia of Uncertain Origin . . . . .	...	...	...	...	...	...	...	...	...	0.34	...	...	0.02
Heat-stroke . . . . .	...	...	...	1.35	1.10	0.35	0.18	0.70	...	...	...	...	0.52
Circulatory Diseases . . . . .	...	...	...	...	0.08	0.12	0.18	0.50	0.89	0.67	0.22	1.21	0.25
Tubercle of the Lungs . . . . .	...	...	...	0.34	0.16	0.12	0.18	0.20	...	...	...	...	0.13
Pneumonia, Lobar . . . . .	...	...	0.63	...	0.39	0.12	0.18	0.10	...	...	0.22	0.40	0.19
Other Respiratory Diseases . . . . .	...	...	...	0.17	0.08	0.35	0.18	...	...	...	0.11	...	0.11
Dysentery . . . . .	...	...	...	...	0.24	0.12	...	0.20	0.89	...	...	0.40	0.13
Diarrhoea . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Hepatic Abscess . . . . .	...	...	...	...	0.08	...	...	0.10	...	...	0.11	...	0.05
ALL CAUSES	2.88	...	5.65	4.40	3.54	3.99	3.39	4.20	5.34	4.70	2.24	4.02	3.75

† Worked on the aggregates.

Fort William	1,085	1'8	...	...	0'9	144'7	...	...	...	11'1	12'0	1'8	3'7	47'9	24'0	7'4	...	7'4	...	183'4	1,158'5	56'24	16'6	35'9	130'9
		...	...	...	0'92	...	...	...	...	...	...	...	0'92	...	...	...	...	...	...	...	7'37	...	...	...	...
Barrackpore	508	2'0	...	...	2'0	2'4'6	...	...	...	...	5'9	3'9	7'9	23'6	19'7	...	...	3'9	...	216'5	813'0	93'21	11'8	45'3	159'4
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1'97	...	...	...	...
GROUP IV.— BENGAL AND ORISSA.	1,593	1'9	...	...	1'3	167'0	...	...	...	7'5	10'0	2'5	5'0	40'2	22'6	5'0	...	6'3	...	194'0	1,048'3	68'03	15'1	38'9	139'8
		...	...	...	...	0'63	...	...	...	...	...	...	0'63	...	...	...	...	...	...	...	5'65	...	...	...	...
B																										
Dinapore	750	...	...	...	5'3	25'3	5'3	...	1'3	2'6	2'6	5'3	...	24'0	9'3	16'0	...	...	2'6	60'0	412'0	17'51	14'7	4'0	41'3
		...	...	...	...	...	...	...	1'33	...	...	...	...	...	...	...	...	...	...	...	1'33	...	...	...	...
Benares	157	...	...	...	146'5	95'5	...	...	...	25'5	6'4	...	19'1	38'2	...	19'1	...	...	...	25'5	866'2	27'26	6'4	6'4	12'7
		
Allahabad and Fort.	931	1'1	...	...	6'4	161'1	26'9	1'1	2'1	12'4	8'6	1'1	1'1	22'6	25'8	18'3	...	1'1	...	82'7	732'5	40'31	16'1	19'3	47'3
		...	...	...	...	1'07	...	...	...	2'15	...	...	...	...	...	...	...	...	...	...	7'52	...	...	...	...
Fyzabad	980	...	...	...	1'0	56'1	40'8	...	1'0	1'0	1'0	3'1	3'1	15'3	8'2	9'2	...	4'1	...	66'3	340'8	16'23	12'2	5'1	49'0
		...	...	...	...	...	...	...	...	...	...	1'02	...	...	...	...	...	...	...	...	4'08	...	...	...	...
Lucknow	2,315	0'4	...	0'4	1'7	46'2	73'4	0'4	2'6	21'2	4'3	0'9	1'3	14'7	19'0	19'9	0'4	1'3	2'2	57'4	607'3	28'88	9'9	6'9	40'6	
		...	...	0'43	...	...	...	...	...	1'30	...	0'43	...	...	...	...	...	...	...	...	3'46	...	...	...	...
Cawnpore	729	...	...	...	2'7	146'8	43'9	9'6	1'4	16'5	12'3	...	...	93'3	...	9'6	...	...	...	17'8	978'0	28'61	1'4	4'1	12'3
		...	...	...	...	...	...	...	...	2'74	...	...	...	1'37	...	...	...	...	...	...	8'23	...	...	...	...
Sitapur	44	...	...	...	68'2	45'5	22'7	...	...	...	...	...	...	...	...	...	...	...	...	...	68'2	272'7	11'59	22'7	22'7
		
GROUP V.— GANGETIC PLAIN AND CHUTIA NAGPUR.	5,906	0'3	...	0'2	2'0	78'5	48'8	1'7	1'9	30'6	5'2	1'7	1'7	27'4	14'0	15'9	0'2	1'4	1'2	57'6	608'2	26'93	10'8	8'0	38'8	
		...	...	0'17	...	0'17	...	...	...	1'35	...	0'34	...	0'17	...	...	...	...	...	...	4'40	...	...	...	...

TABLE III—continued.
RATIOS OF STATIONS, GROUPS AND ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.									
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the lungs.	Pneumonia, Lobar.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	All causes.	Constantly sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
A	Bareilly 945	60'3	14'8	...	2'1	5'3	1'1	1'1	11'6	24'3	3'2	9'5	...	4'2	...	24'3	433'9	19'32	3'2	3'2	18'0
		2'12	2'12
Roorkee 828	...	...	...	2'4	33'8	10'9	...	...	1'2	1'2	1'2	2'4	4'8	...	7'2	2'4	6'0	8'4	80'9	329'7	14'67	6'0	18'1	56'8
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1'21	...	...	...	2'42	...	...	...	...
Meerut 3,093	...	...	...	3'8	111'8	...	0'5	1'4	1'9	4'8	1'4	3'3	17'2	8'6	4'3	0'5	2'4	0'5	65'9	441'9	26'16	8'1	7'6	50'2
	...	...	...	0'48	...	...	...	...	1'43	...	...	...	0'48	0'48	...	...	...	...	0'48	4'30	...	0'48	...	...
Delhi 1,061	...	...	1'9	...	283'7	15'1	...	2'8	10'4	8'5	0'9	0'9	12'2	14'1	7'5	...	5'7	3'8	83'9	640'9	28'71	6'6	7'5	69'7
	...	...	...	...	0'94	...	...	...	1'89	...	...	...	...	...	...	...	...	...	...	2'83	...	...	...	...
Ambala 751	...	...	...	2'7	591'2	21'3	...	...	4'0	2'7	1'3	2'7	18'6	14'6	2'7	...	...	1'2'7	50'6	1,012'0	42'86	17'3	12'0	21'3
	...	...	...	...	...	...	...	...	3'59	...	...	...	...	...	...	...	...	...	...	6'66	...	...	...	...
B	Jullundur 806	192'3	11'2	2'5	11'2	...	2'5	...	1'2	...	38'5	411'9	14'63	8'7	5'0	24'8
	

Ferozepore	900	...	...	...	12'2	526'7	12'2	...	1'1	12'2	6'7	2'2	13'3	26'7	23'3	4'4	...	1'1	3'3	44'4	882'2	31'03	6'7	2'2	35'6
		...	...	...	...	...	...	...	...	3'33	...	...	...	2'22	...	1'11	...	...	...	...	7'78	...	...	...	...
Amritsar	225	...	...	...	...	564'4	75'6	...	...	4'4	8'9	...	...	...	...	22'2	...	...	...	80'0	884'4	24'93	26'7	4'4	48'9
	
Lahore Cantonment and Fort.	1,180	...	...	0'8	0'8	1,077'1	...	...	0'8	...	2'5	2'5	5'1	6'8	16'1	12'7	...	0'8	...	141'5	1,437'3	49'89	12'7	33'9	94'9
		0'85	0'85	0'85	2'54	5'93
Sialkot	1,242	...	...	...	3'2	227'9	10'5	...	0'8	0'8	4'0	3'2	4'0	13'7	13'7	0'8	0'8	2'4	...	62'8	579'7	31'47	8'1	9'7	45'1
		0'81	2'42
Rawalpindi	2,505	...	...	...	1'2	279'6	12'4	...	2'4	0'4	13'6	1'2	4'0	27'9	6'8	0'4	...	1'6	4'4	91'4	686'2	38'98	17'6	8'8	65'1
		0'40	0'40	0'40	2'79
Campbellpore	151	0'6	...	...	13'2	119'2	46'3	...	...	...	13'2	...	...	26'5	...	...	...	26'5	...	119'2	748'3	23'38	6'6	...	112'6
	
Attock	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	
Jhelum	7	...	...	...	...	142'9	...	...	...	...	...	...	...	...	...	...	...	...	...	142'9	428'6	2'86	...	...	142'9
	
GROUP VI.— UPPER SUB- HIMALAYA	12,695	0'1	...	0'2	2'6	322'5	11'3	0'1	1'3	3'0	5'9	1'5	4'6	17'5	9'5	4'9	0'3	2'7	2'2	73'8	679'3	30'90	10'6	10'4	52'9
		0'08	0'16	0'08	1'10	0'08	0'16	0'39	0'08	0'24	...	0'08	0'08	...	3'54	...	0'08	...

TABLE III—continued.
RATIOS OF STATIONS, GROUPS AND ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.										2. DEATH RATE.													
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the Lungs.	Pneumonia, Lobar.	Other Respiratory diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	All Causes.	Constantly sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
Risalpur . . .	700	91'4	14'3	1'4	2'9	2'9	2'9	27'1	4'3	8'6	8'6	362'8	13'37	...	1'4	7'1
Landi Kotal . . .	874	19'4	...	...	...	72'1	819'2	...	3'4	...	8'0	1'1	...	6'9	2'3	...	...	1'1	10'3	1,072'1	21'96	3'4	3'4	3'4
Ali Masjid . . .	10	...	...	...	...	...	200'0	...	...	...	...	...	...	...	...	100'0	...	...	...	700'0	7'00	...	...	...
Jamrud . . .	20	...	...	...	50'0	200'0	200'0	...	...	...	...	...	...	50'0	100'0	...	...	...	50'0	800'0	6'50	...	50'0	...
Thall . . .	7	...	...	...	...	1,285'7	...	...	...	...	...	...	...	142'9	...	...	...	...	...	1,428'6	21'43	...	...	...
Kohat . . .	101	...	...	...	...	2,019'8	168'3	...	...	...	19'8	...	29'7	29'7	9'9	49'5	...	9'9	29'7	2,792'1	103'96	...	...	29'7
Dardoni . . .	75	...	...	...	...	706'7	133'3	...	...	...	...	...	13'3	13'3	26'7	...	...	...	53'3	1,226'7	46'93	26'7	...	26'7
Idak . . .	81	...	...	...	...	543'2	...	...	...	12'3	12'3	...	37'0	24'7	12'3	12'3	...	...	...	913'6	8'52	...	...	...
Bannu . . .	139	...	...	...	...	1,007'2	158'3	...	...	...	...	...	14'4	64'7	50'4	50'4	...	...	194'2	1,978'4	155'47	28'8	14'4	151'1
Kalabagh and Mari Indus.	75	...	...	...	...	600'0	40'0	...	...	13'3	...	...	...	13'3	...	13'3	...	...	...	786'7	18'93	...	...	...
Sargodha . . .	5	...	...	...	...	200'0	...	...	...	...	...	...	...	...	...	...	...	...	...	400'0	4'00	...	...	...

Piazha Raghza	40	25'0	...	...	350'0	...	...	...	...	...	...	...	125'0	...	...	...	...	25'0	950'0	23'75	...	25'0	...
Sara Rogha	80	...	...	12'5	1,137'5	...	...	...	...	...	...	...	12'5	75'0	85'0	87'5	...	...	1,650'0	40'88	...	...	...
Kotkai	31	...	...	...	1,741'9	...	32'3	...	...	...	...	...	...	...	...	...	...	32'3	1,903'2	31'29	...	32'3	...
Asad Khel	39	...	...	...	1,179'5	384'6	...	...	25'6	...	...	...	...	...	...	25'6	...	...	1,820'5	13'85	...	...	...
Jandola	43	...	...	...	907'0	209'3	...	...	...	...	...	...	23'3	69'8	23'3	...	...	...	1,814'0	29'77	...	...	...
Mhirgi	91	...	...	...	1,011'0	...	...	11'0	11'0	...	11'0	...	...	22'0	44'0	33'0	...	11'0	1,329'7	3'96	...	...	...
Manzai	118	813'6	16'9	8'5	8'5	8'5	8'5	50'8	42'4	50'8	1,644'1	34'49	25'4	8'5	16'9	
Tank	50	20'0	5,540'0	240'0	...	23'0	20'0	20'0	8'47	20'0	40'0	2,180'0	43'20	
Dera Ismail Khan	189	...	...	...	788'4	95'2	...	...	47'6	10'6	5'3	...	31'7	37'0	31'7	...	...	100'5	1,518'5	106'40	...	5'3	95'2
Mona	4	...	...	...	10'58	...	...	...	5'2	...	...	...	...	...	...	...	...	...	26'46	...	...	...	...
Somana Ridge	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Razmak	876	60'5	1'14	...	246'6	3'4	...	1'1	13'7	6'8	...	...	24'0	1'1	27'4	...	...	13'7	752'3	14'37	3'4	3'4	6'8
Razani	81	...	...	...	234'6	24'7	...	...	...	...	...	...	24'7	...	24'7	...	...	12'3	530'9	18'40	...	...	12'3
A Nowshera	1,093	...	...	6'4	385'2	40'2	...	2'7	5'5	5'5	0'9	6'4	20'1	0'9	2'7	...	...	38'4	709'0	27'07	6'4	2'7	29'3
Peshawar	1,426	1'4	...	1'4	479'4	69'4	0'7	4'8	0'7	18'5	1'4	3'4	19'9	4'8	3'4	...	1'4	0'7	52'2	890'8	31'71	8'2	6'2	37'7	
Multan	467	...	2'1	4'3	297'6	132'8	...	2'1	6'4	12'8	...	8'6	17'1	6'4	15'0	...	2'1	17'1	87'8	907'9	36'42	17'1	15'0	55'7	
C Hyderabad	483	2'1	109'7	4'1	...	2'1	...	4'1	29'0	...	2'1	4'1	84'9	424'4	18'67	2'1	12'4	70'4	
Karachi	1,286	...	1'6	0'8	134'5	0'8	...	3'1	0'8	14'8	0'8	2'3	14'8	4'7	9'3	...	5'4	...	105'8	599'5	33'54	8'5	23'3	73'9	
GROUP VII.— N.-W. FRONTIER, INDUS VALLEY, AND N.-W. RAJ- PUTANA.	8,522	8'6	...	0'6	1'9	352'5	123'6	0'2	2'7	4'5	9'6	1'1	4'1	21'0	6'8	11'6	0'5	1'3	1'3	50'0	853'2	31'83	6'3	8'0	35'6
		0'12	...	0'23	0'12	0'59	0'35	0'12	0'12	0'12	0'35	0'12	3'99	

* Derived from the aggregates.

† Worked on the aggregates.

TABLE III—contd.

RATIOS OF STATIONS, GROUPS AND ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.										2. DEATH RATE.													
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the Lungs.	Pneumonia, Lobar.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
Deesa A	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Neemuch B	300	..	..	3'3	53'3	..	..	..	..	3'3	3'3	10'0	10'0	..	..	..	10'0	..	43'3	306'7	13'27	16'7	..	26'7	..
Nasirabad	802	..	..	1'2	36'2	..	1'2	1'2	1'2	3'7	2'5	2'5	17'4	7'5	1'2	..	2'5	..	57'4	269'3	13'44	15'0	3'7	38'6	..
Muttra	507	..	..	2'0	106'5	..	..	..	2'0	5'9	..	3'9	17'8	2'0	15'8	..	7'9	10'0	69'0	404'3	17'14	..	19'7	49'3	..
Agra	1,000	..	..	1'0	1'0	200'0	19'0	..	..	14'0	3'0	..	4'0	15'0	6'0	10'0	..	8'0	4'0	53'0	564'0	23'00	11'0	6'0	36'0
Jhansi	1,149	..	..	0'9	0'9	82'7	..	0'9	..	6'1	1'7	0'9	5'2	6'1	7'0	2'6	0'9	0'9	6'1	55'7	302'9	17'18	4'4	0'9	50'5
Nowgong	120	..	..	..	..	216'7	..	..	..	8'3	..	..	..	..	..	..	..	..	..	91'7	625'0	24'50	25'0	..	66'7
Mhow and Indore	1,598	..	..	5'0	56'3	6'9	0'6	1'9	0'6	6'3	0'6	2'5	6'3	6'9	2'5	..	1'3	..	33'8	263'4	16'35	..	1'3	32'5	..

Ahmedabad . .	109	{	...	...	...	...	119'3	...	...	...	...	...	...	18'3	36'7	27'5	9'2	...	...	...	64'2	53'1	27'25	18'3	9'2	36'7
Babugarh . .	6	{	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP VIII.— SOUTH-EAST RAJPUTANA, CENTRAL INDIA AND GUJARAT.	5,607	{	...	...	0'4	2'3	93'3	5'4	0'5	0'9	4'3	3'9	0'9	4'1	11'2	6'2	5'0	0'2	3'6	2'9	50'5	352'9	17'51	6'8	4'1	39'6
		{	...	...	0'18	0'89	...	...	...	0'18	0'18	0'18	0'18	0'18	0'18	...	...	...	...	...	...	3'39	...	...	...	...
A																											
Saugor . .	26	{	...	...	...	...	269'2	...	...	...	...	...	...	...	...	...	...	...	...	...	38'5	615'4	24'63	...	...	38'5
Jubbulpore . .	1,836	{	...	...	...	...	55'5	...	...	2'7	16'9	6'5	1'6	4'4	10'3	43'0	9'3	0'5	2'7	...	77'3	456'4	29'48	8'2	13'6	55'5
Kamptee and Sitabaldi . .	895	{	...	...	...	...	...	...	...	1'63	0'54	...	...	...	...	...	...	...	...	...	...	5'99	...	...	...	...
B																											
Secunderabad . .	2,818	{	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5'59	...	...	...	...
		{	...	...	0'7	20'9	...	0'7	2'5	1'4	0'7	0'4	2'1	4'6	25'5	0'7	...	0'7	0'7	...	65'3	249'5	15'23	14'2	3'9	47'2
		{	...	...	...	...	0'35	...	...	0'71	0'71	...	...	...	0'35	...	...	...	...	...	...	3'55	...	...	...	...
Belgaum . .	443	{	...	...	...	...	2'3	47'4	9'0	2'3	2'3	...	...	...	18'1	4'5	9'0	...	...	...	221'2	749'4	35'50	22'6	36'1	162'5
		{	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2'26	...	...	...	...
Satara . .	28	{	...	...	...	...	35'7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	142'9	1'79	...	...	...
Poona . .	2,306	{	...	...	0'4	1'3	180'0	...	0'4	3'0	...	19'5	1'3	1'3	11'7	14'7	12'6	...	0'9	1'7	73'7	654'4	50'78	20'4	20'4	33'0
		{	...	...	0'87	0'43	...	...	...	...	0'87	0'43	0'43	...	...	...	0'43	...	...	...	...	5'20	...	...	...	...
Kirkee . .	677	{	...	...	...	...	131'5	17'7	1'5	...	4'4	1'5	3'0	...	23'6	5'9	3'0	...	3'0	...	103'4	567'2	15'64	4'4	10'3	88'6
Ahmednagar . .	977	{	2'0	76'8	10'2	...	1'0	...	3'1	1'0	2'0	11'3	7'2	12'3	15'4	64'5	539'4	25'67	16'4	5'1	43'0
		{	...	...	...	...	...	...	...	...	1'02	...	...	...	1'02	...	...	...	...	...	...	3'07	...	...	...	...
GROUP IX— DECCAN.	10,005	{	...	...	0'1	1'6	91'9	6'3	0'8	2'3	9'0	6'7	1'0	1'9	11'1	20'1	6'9	0'1	1'5	2'1	76'6	485'9	28'73	13'5	12'5	50'6
		{	...	...	...	0'30	0'20	...	...	...	0'70	0'50	0'20	0'10	...	0'20	...	0'10	...	...	...	4'20	...	...	...	...

EUROPEAN TROOPS, 1923.

TABLE III—continued.
RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.											2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the Lungs.	Pneumonia Lobar.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	ALL CAUSES.	CONSTANTLY SICK.	Syphilis.	Soft Chancre	Gonorrhoea.
Colaba . . .	827	...	...	1'3	...	159'3	...	...	...	20'6	1'2	2'4	36'3	41'1	8'5	...	1'3	1'2	200'7	928'7	39'11	23'0	50'8	127'0
Mallapuram . . .	296	...	...	3'4	10'1	...	...	...	...	13'5	3'4	...	13'5	...	10'1	...	3'4	...	108'1	422'3	23'72	10'1	20'3	77'7
GROUP WESTERN COAST. X.—	1,123	...	...	0'9	0'9	127'3	...	...	...	18'7	1'8	1'8	30'3	30'3	8'9	...	1'8	0'9	176'3	795'2	35'05	19'6	42'7	114'0
Bailary . . .	326	...	...	24'5	64'4	46'0	...	...	...	6'1	...	...	3'1	18'4	9'2	...	6'1	...	76'7	457'0	16'87	9'2	...	67'5
Bangalore . . .	2,045	0'5	...	0'5	4'4	45'5	...	...	2'4	8'8	...	3'4	18'1	15'1	2'4	...	2'0	...	124'2	441'6	27'68	18'6	14'7	90'9
Madras and St. Thomas' Mount.	605	1'7	...	...	41'3	...	1'7	3'3	3'3	24'8	...	3'3	16'5	3'3	1'7	...	...	1'7	223'1	947'1	52'13	38'0	52'9	132'2
GROUP SOUTHERN INDIA. XI.—	2,976	0'7	...	0'3	5'7	46'7	5'0	0'3	2'4	0'7	11'8	...	3'0	16'1	13'1	3'0	...	2'0	0'3	139'1	546'0	31'47	21'5	20'8	96'8

Ranikhet and Chaubuttia.	1,185	...	...	...	...	75'1	10'1	...	4'2	...	12'6	...	4'2	29'5	20'2	7'6	...	2'5	16'0	71'7	571'3	27'37	15'2	13'5	43'0	
		...	...	...	...	...	...	...	...	...	...	...	...	0'8	...	...	...	...	...	...	2'53	...	...	...	...
Chakrata . . .	1,004	...	...	...	...	1'0	33'9	...	2'0	...	12'0	...	4'0	20'9	1'0	2'0	...	2'0	7'0	34'9	416'3	19'96	7'0	1'0	26'9	
		...	...	...	...	...	...	...	...	...	1'00	...	1'00	...	...	...	...	...	...	...	...	2'99	...	...	...	...
Lebong . . .	530	...	...	...	...	...	...	...	1'9	...	13'2	...	...	45'3	5'7	24'5	1'9	7'5	1'9	39'6	418'9	18'42	3'8	...	35'8	
			
Solon . . .	130	...	...	...	...	64'5	7'7	...	...	...	23'1	23'1	...	7'7	...	7'7	...	7'7	...	15'4	438'5	13'62	...	...	15'4	
			
Dagshai . . .	509	2'0	...	...	...	31'4	9'8	...	3'3	...	2'0	...	5'9	9'8	2'0	2'0	...	2'0	...	33'4	210'2	9'33	5'9	9'8	17'7	
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3'93	...	...	...	...
Subathu . . .	201	...	...	...	...	328'4	10'0	...	...	...	...	...	...	14'9	19'9	14'9	...	...	...	...	...	547'3	18'31	...	...	...
			
Jutogh . . .	239	...	...	...	...	25'1	...	...	...	...	...	...	...	16'7	...	4'2	4'2	...	...	33'5	188'3	9'29	12'6	...	20'9	
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4'18	...	...	...	...
Kalabagh and Baragali.	76	...	...	...	...	13'2	...	...	...	...	...	...	...	13'2	13'2	...	...	...	...	105'3	355'3	7'24	...	...	105'3	
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26'32	...	...	...	...
Kuldana . . .	395	...	...	...	...	2'5	25'3	10'1	...	...	10'1	...	2'5	17'7	7'6	10'1	...	5'1	2'5	45'6	295'1	4'71	12'7	5'1	27'8	
			
Camp Gharial . . .	409	26'9	2'4	110'0	68'4	...	14'7	...	9'8	...	4'9	12'2	2'4	29'3	501'2	22'03	2'4	4'9	22'0	
		
Camp Barian and Khairagali.	181	88'4	22'1	5'5	49'7	265'2	77'68	22'1	5'5	22'1	
		
Kbanspur and Ghora Dhaka.	256	7'8	164'1	31'3	...	7'8	...	7'8	...	3'9	19'5	19'5	15'6	58'6	503'9	15'51	11'7	7'8	39'1
		3'91	

TABLE III—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.											2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly-Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the Lungs.	Pneumonia Lobar.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	ALL CAUSES.	CONSTANTLY SICK.	Syphilis.	Soft Chancre.	Gonorrhoea.
Cherat . . .	360	33'3	...	...	13'9	177'8	11'1	...	5'6	...	22'2	...	...	11'1	11'1	5'6	...	2'8	...	30'5	544'4	16'94	5'6	2'8	22'2
	
Quetta . . .	2,593	...	...	...	2'7	69'8	1'2	...	3'1	0'8	4'2	...	1'5	23'5	44'3	6'2	0'4	1'5	1'2	59'4	403'4	21'29	10'0	20'4	28'9
		...	...	...	0'77	...	...	...	...	...	...	...	...	0'39	...	...	...	...	...	...	2'70	...	...	...	...
Maymyo . . .	771	...	...	...	...	88'2	...	...	1'3	...	5'2	1'3	1'3	14'3	2'6	18'2	...	...	2'6	98'6	570'7	31'02	19'5	15'6	63'6
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1'30	...	...	...	...
Abbottabad . . .	60	...	...	...	...	416'7	33'3	...	...	...	...	...	...	...	...	16'7	...	...	...	116'7	850'0	17'17	33'3	33'3	50'0
	
Loralai . . .	27	...	...	...	...	370'4	107'4	...	...	...	...	...	...	...	...	...	...	...	...	37'0	963'0	24'81	...	37'0	...
	
GROUP XII-2—HILL STATIONS.	8,926	2'7	...	...	1'9	79'5	9'0	...	3'2	0'6	8'4	0'1	2'4	21'1	18'7	8'1	0'6	2'0	3'7	53'7	439'3	21'40	10'2	11'0	32'5
		...	...	...	0'22	...	...	...	...	...	0'22	...	...	0'22	0'11	...	...	0'11	...	...	...	2'24	...	...	...

Naini Tal . . .	105	38'1	...	9'5	133'3	9'5	...	...	28'6	9'5	...	28'6	...	19'0	...	...	123'8	609'5	42'95	9'5	19'0	95'2	
Landour . . .	56	...	...	...	160'7	...	...	...	17'9	...	...	35'7	...	...	...	35'7	142'9	607'1	28'04	...	35'7	107'1	
Kasauli . . .	395	...	...	5'1	245'6	5'1	...	...	2'5	5'1	12'7	20'3	12'7	...	5'1	...	2'5	38'0	739'2	48'78	5'1	5'1	27'8
Dalhousie . . .	425	...	...	9'4	381'2	16'5	...	...	11'8	...	2'4	7'1	9'4	2'4	...	...	21'2	657'6	25'15	9'4	2'4	9'4	
Murree and Lower and Upper Toppas.	234	...	...	...	119'7	12'8	...	...	8'5	...	...	25'6	8'5	...	...	...	8'5	363'2	46'50	4'3	...	4'3	
Upper and Lower Toppas.	160	...	...	12'5	150'0	...	...	...	6'3	12'5	...	...	12'5	12'5	...	...	...	56'3	375'0	5'00	...	12'5	43'8
Mount Abu . . .	71	...	...	...	183'1	...	...	...	42'3	...	...	56'3	...	14'1	...	...	14'1	788'7	32'54	14'1	...	...	...
Pachmarhi . . .	82	...	...	...	158'5	...	...	...	...	...	...	...	...	...	...	...	24'4	439'0	14'27	12'2	...	12'2	...
Purandhur . . .	46	...	...	...	587'0	...	...	...	152'2	...	...	108'7	...	43'5	21'7	...	...	21'7	1,586'9	117'39	...	...	21'7
Wellington . . .	911	...	...	1'1	30'7	...	...	3'3	12'1	2'2	1'1	25'2	25'2	7'7	2'2	2'2	3'3	51'6	405'0	23'24	8'8	13'2	29'6
GROUP XII-d.— Hill Convalescent Depôts and Sanatoria.	2,485	1'6	...	4'0	167'0	5'2	...	1'	0'4	14'1	3'0	2'8	22'5	14'5	5'2	2'0	1'6	1'6	43'1	539'2	31'20	7'2	8'4	27'4
		0'40	1'21	...	0'40	...	0'40	0'40	4'02	...	0'40

TABLE III—concluded.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS, GROUPS AND ARMIES.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.									
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandy Fever.	Pyrexia of Uncertain Origin.	Rheumatic Fever.	Heat-stroke.	Circulatory Diseases.	Tubercle of the Lungs.	Pneumonia Lobar.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scabies.	Veneral Diseases.	ALL CAUSES.	CONSTANTLY SICK.	Syphilis.	Soft Chancre.	Gonorrhoea.
Troops marching	246	...	...	...	...	28'5	28'5	48'8	...	16'3	...	...	4'1	4'1	36'6	...	...	...	24'4	638'2	3'82	...	...	24'4	
Deolali Depôt	390	...	...	...	...	192'3	...	...	...	12'8	7'7	...	30'8	5'1	25'6	...	...	...	110'3	682'0	25'36	17'9	48'7	43'6	
Poonamallee Depôt.	636	...	...	...	...	128'9	11'0	18'9	...	6'3	7'9	4'7	...	20'4	4'7	29'9	...	...	...	77'0	665'1	17'03	11'0	29'9	36'2
ADEN	1,174	...	...	...	0'9	21'3	94'5	...	0'9	0'9	3'4	0'9	2'6	8'5	4'3	6'0	...	2'6	0'9	34'1	366'3	15'60	2'6	2'6	29'0
Wana Column	261	26'8	...	...	...	195'4	...	...	...	...	...	...	7'7	...	3'8	...	...	...	19'2	436'8	3'30	...	3'8	15'3	
NORTHERN COMMAND.	16,543	2'7	...	0'2	3'1	343'8	68'1	0'1	2'1	1'9	8'5	1'3	4'3	17'4	8'2	4'6	0'4	1'4	1'7	56'8	733'8	30'20	9'8	8'1	38'9
		...	...	0'06	0'12	0'24	...	...	0'06	0'54	0'30	0'18	0'36	0'12	0'24	...	0'06	...	...	0'06	3'51	...	0'06	...	...

WESTERN COM- MAND.	5,387	...	...	0'4	1'9	87'6	2'8	0'2	2'8	0'7	6'9	0'6	2'4	21'5	24'7	6'1	0'6	2'4	0'6	71'7	441'4	23'04	9'8	17'4	44'4	
		0'19	0'37	...	...	...	...	...	0'19	...	0'19	...	...	...	...	...	...	...	...	...						2'41	...	...	...	...
EASTERN COM- MAND.	16,813	0'5	...	0'2	2'0	105'8	21'4	0'7	1'6	13'6	6'7	1'2	3'2	24'4	11'3	10'6	0'3	3'6	3'3	72'3	579'0	28'73	9'5	11'2	51'7	
		0'06	0'06	0'24	...	...	...	0'89	0'06	0'12	0'18	0'18	0'06	...	0'06	...	...	...	0'06	...						3'51
SOUTHERN COM- MAND.	18,707	0'1	...	0'2	2'4	84'0	4'8	0'6	2'0	5'3	8'5	1'1	2'4	13'6	17'0	6'1	0'3	1'7	1'8	86'2	484'3	27'30	13'4	14'4	58'5	
		...	...	...	0'37	0'32	...	0'05	0'05	0'43	0'48	0'16	0'05	0'05	0'16	...	0'05	...	...	...						4'28	...	...	...	...
BURMA DISTRICT.	2,000	...	...	0'5	53'5	...	...	0'5	0'5	4'5	1'0	1'0	19'0	7'5	19'0	...	1'5	1'5	113'5	645'5	34'50	19'5	32'0	62'0		
		...	...	...	0'50	...	...	...	...	...	...	...	...	...	...	...	...	...	...						...	2'00	...	...	...	...
ADEN BRIGADE .	1,174	...	...	0'9	21'3	94'5	...	0'9	0'9	3'	0'9	2'6	8'5	4'3	6'0	...	2'6	0'8	34'1	366'3	15'60	2'6	2'6	29'0		
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						...	0'85	...	...	...	...
WAZIRISTAN DISTRICT.	2,008	26'9	...	1'0	58'2	47'8	0'5	1'5	12'9	6'0	1'0	4'5	29'4	16'4	28'9	0'5	...	0'5	35'4	1,140'9	43'24	6'0	4'5	24'9		
		0'50	...	...	1'00	...	...	...	0'50	...	...	0'50	0'50	...	...	...	...	...	...						...	7'47	...	...	...	...
TROOPS MARCH- ING.	246	...	...	...	28'5	28'5	48'8	...	16'3	...	...	...	4'1	4'1	36'6	...	...	...	21'4	638'2	3'82	...	...	24'4		
	
WANA COLUMN .	261	26'8	...	...	195'4	...	...	...	...	...	...	...	7'7	...	3'8	...	...	2'0	19'2	436'8	3'30	...	3'8	15'3		
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						26'82	...	...	...	...
ALL INDIA .	63,139	1'8	...	0'2	2'3	172'2	28'6	0'6	1'9	6'3	7'5	1'1	3'1	18'7	13'2	8'2	0'3	2'1	...	71'3	595'4	28'40	10'7	12'0	48'5	
		0'02	...	0'05	0'19	0'27	...	0'02	0'03	0'52	0'25	0'13	0'19	0'11	0'13	...	0'05	...	...	0'03						3'75
Constantly sick rate per rifle.	Rawalpindi	2,505	...	...	0'09	11'43	0'45	...	0'28	0'00	1'23	0'08	0'07	0'69	0'44	0'04	...	0'06	...	11'92	38'98	38'98	1'27	0'17	10'47	
	Lahore .	1,180	...	...	0'14	0'49	21'12	...	0'03	...	0'52	0'58	0'15	0'26	0'69	0'36	0'41	0'10	...	15'46	49'83	49'83	1'52	2'58	11'04	
	Calcutta (Fort William).	1,085	0'07	...	...	0'29	8'22	...	...	...	0'15	2'24	1'02	1'08	3'93	3'41	0'13	...	0'70	...	5'22	56'24	56'24	0'53	0'76	3'93
	Karachi .	1,286	...	...	0'11	0'16	3'12	0'02	...	0'37	0'03	1'11	0'16	0'23	0'44	0'39	0'19	0'11	0'37	...	11'31	33'55	31'55	0'47	2'28	8'56
	Poona .	2,306	...	...	0'02	0'31	6'90	...	0'09	0'37	...	0'73	0'36	0'38	0'51	1'01	0'47	0'12	0'06	...	21'53	50'73	50'78	4'24	6'03	11'26

TABLE IV.

ENTERIC GROUP OF FEVERS by months, stations, groups and armies.

TABLE V.

MALARIA by months, stations, groups and armies.

TABLE VI.

PYREXIA OF UNCERTAIN ORIGIN by months stations groups and armies.

* STATIONS AND GROUPS.	ADMISSIONS FROM ENTERIC GROUP OF FEVERS IN EACH MONTH.											ADMISSIONS FROM MALARIA IN EACH MONTH.											ADMISSIONS FROM PYREXIA OF UNCERTAIN ORIGIN IN EACH MONTH.																
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Port Blair	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon	1	1	1	...	...	...	4	2	1	3	...	1	...	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP I.—BURMA COAST AND BAY ISLANDS	1	1	1	...	...	4	4	2	1	3	...	1	...	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Dufferin (Mandalay)	8	3	3	1	...	...	1	...	2	...	1	4	23	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP II.—BURMA—INLAND	8	3	3	1	...	...	1	...	2	...	1	4	23	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	1	...	...	...	...	...	...	...	...	...	...	1	10	6	20	14	18	5	7	21	8	9	27	12	157	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	1	...	...	...	...	1	1	2	3	9	3	18	11	14	1	6	23	18	109	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP IV.—BENGAL AND ORISSA	1	...	...	...	...	...	1	...	...	...	...	2	11	8	23	23	21	23	18	35	9	15	50	30	256	...	...	...	...	...	...	...	...	...	...	...	...	...
B	
Dinapore	1	...	1	...	1	...	1	...	...	...	4	1	2	3	4	2	2	2	...	1	...	...	2	19	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	1	2	2	5	4	3	5	1	...	...	23	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad and Fort	1	...	2	...	1	1	...	1	...	...	...	6	2	1	3	3	2	7	14	27	35	44	9	150	...	...	...	1	...	...	...	...	...	...	...	...	1	
Fyzabad	1	...	...	...	...	...	...	...	...	...	1	5	3	1	1	3	2	8	11	10	6	5	55	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	1	...	...	...	2	...	1	4	...	4	6	3	1	5	15	11	15	9	12	15	7	107	...	...	...	...	...	...	...	...	...	1	...	...	1		
Cawnpore	2	...	...	...	...	...	...	...	2	2	5	2	9	2	6	15	10	4	16	9	24	5	107	...	...	...	3	1	2	...	1	...	...	...	...	7	
Sitapur	1	...	...	...	...	...	...	1	1	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	1	
GROUP V.—GANGETIC AND CHUTIA NAGPUR	1	...	4	1	4	1	1	...	1	3	...	1	17	20	11	18	17	31	37	46	42	72	66	80	24	464	4	1	2	...	2	...	1	10
A	
Bareilly	1	3	1	1	3	...	2	6	14	14	10	2	57	...	...	...	...	...	...	...	...	...	...	...	...	...
Rurki	1	...	1	...	...	...	...	...	...	2	2	2	1	...	...	1	1	7	6	5	3	28	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	1	1	...	1	1	1	...	1	2	...	8	10	7	12	7	13	22	30	40	41	37	11	4	234	...	...	...	1	...	...	...	...	...	...	...	...	1	
Delhi	9	4	6	6	14	15	6	33	80	83	26	10	301	...	...	...	...	...	...	...	...	...	...	...	...	...
Ambala	2	2	2	...	...	5	2	12	9	25	26	9	14	444	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLES VII, VIII AND IX:

GROUP VI.—UPPER SUB-HIMALAYA		I	2	I	7	8	5	5	22	17	24	21	8	121	3	4	3	7	4	1	1	7	5	14	13	62		
Nowshera									1					1		1										2	3	
Peshawar									1					1			1										5	
Multan				1								1	2	2													7	
C																												
Hyderabad																											1	
Kotkai																		1										
Karachi								1																				
Darioni								1			3	1		6	1	1	2	2							3	1	2	12
Risalpur														1														
Idak											1	1	1	3													6	
Fort Jamrud														1					1	1	1				1	1	1	6
Bannu														1													1	
Kohat				1							1	2	2	1		1	1										2	
Asad Khef														1													5	
Thal														1													1	
Razmak														1														
Razani														1	2		1	1	2	1	1	7	4		4	1	24	
Sora Rogha																											2	
Jandola				1							1			2				1	1								7	
Khirgi														1														
Landi Kotai											3		1														3	
Manzai														1													3	
Tank														2													5	
Dera Ismail Khan														2													5	
		1			1				1	1		2		1		1						2	3				6	
GROUP VII.—N.-W FRONTIER, INDUS VALLEY, AND N.-W. RAJPUTANA.																												
		1	2	4	4	1	6	1	10	12	9	5	3	58	7	4	6	12	9	3	4	19	10	6	10	9	99	
B																												
Nasirabad														4													1	
Muttra														1													8	
Agra				1										1				2		1			1	3			1	
Jhansi		1								1	1		3			1	2	1				1	3		1		10	
Nowgong			1	2		1			2		1		1				2						1				3	
Mhow and Indore														1													1	
Ahmedabad			1						1	2	3	2	1	11				1	2					1			4	
			1			1			1					3									1				1	
GROUP VIII.—S.-E. RAJPUTANA, CENTRAL INDIA AND GUJARAT																												
		1	3	2		3	1	1	6	4	3	8	2	35		1	4	5	3	1	1	3	8	1	1		28	

* Stations where neither Cholera nor Dysentery nor Diarrhoea occurred are not shown in these tables. For the annual ratios, see Table III.

TABLE VII

CHOLERA by months, stations, groups and armies.

TABLE VIII

DYSENTERY by months, stations, groups and armies.

TABLE IX

DIARRHŒA by months, stations, groups and armies.

STATIONS, GROUPS AND COMMANDS.	ADMISSIONS FROM CHOLERA IN EACH MONTH.												ADMISSIONS FROM DYSENTERY IN EACH MONTH.												ADMISSIONS FROM DIARRHŒA IN EACH MONTH.														
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
	A																																						
Inbulpore													79	3		9	1						1	1	1	1	17												
Kamptee & Sitabaldi												3														3													
B																																							
Secunderabad												4	4													4													
Belgaum												1	2													4													
Poona												1	2													29													
Kirkee												2														2													
Ahmednagar												4														12													
GROUP IX.—DECCAN												5	11	10	16	4	16	26	51	22	14	16	10	201	6	4	17	4	1		7	14	5	3	5	3	69		
Colaha												3	2		10	3		4	5	4		2	1	34							2	2		1		2	7		
Mallapuram																																						3	
GROUP X.—WESTERN COAST												3	2		10	3		4	5	4		2	1	34		1		1			2	2		1		3	10		
A																																							
Bellary												2			1		1		1						6			2								1		3	
Bangalore												1	7	2	1	2	3	2	4	1	2	3	3	31				1	1				1	1			1		5
B																																							
Madras and St. Thomas' Mount																1					1				2								1					1	
GROUP XI.—SOUTHERN INDIA												3	7	3	2	3	3	3	5	2	2	3	3	39			2	1	1				2	1		1	1	9	
Ranikhet and Chaubutia																1	5	7	3	2	3	3		24				5			2		2				9		
Chakrata																								1			1	1									2		
Lebong																	2												2	8		1	1	1				13	
Solan																									3				1									1	

TABLE X.

STATISTICS OF OFFICERS, WOMEN AND CHILDREN.

SICKNESS and MORTALITY among OFFICERS, WOMEN and CHILDREN of the BRITISH ARMY in India in 1923.

	OFFICERS.							India.
	Northern Command.	Western Command.	Eastern Command.	Southern Command.	Burma Indpt. District.	Waziris-tan District.	Aden Brigade.	
STRENGTH	754	268	574	915	62	131	42	2,788
CASES REMAINING FROM 1922	22'5	18'7	17'4	14'2	...	...	...	16'1
INVALIDING	9'3	29'8	27'9	26'2	16'1	...	23'8	20'4
CONSTANTLY SICK	23'62	20'75	24'81	21'26	27'42	22'52	18'33	22'42
	ADMISSIONS.							
Influenza	26	...	5'2	3'3	...	53'4	...	5'4
Cholera	...	...	...	...	...	...	...	...
Small-pox	2'6	...	1'7	...	...	...	...	1'1
Measles	1'3	...	...	1'1	...	...	...	0'7
Whooping Cough	...	...	...	...	...	...	...	...
Enteric Group of Fevers	6'6	...	19'2	2'2	...	7'6	...	6'8
Malaria	139'3	97'0	78'4	84'2	64'5	282'4	95'2	106'9
Sandfly Fever	58'4	11'2	31'4	3'3	...	7'6	190'5	27'6
Pyrexia of uncertain origin	...	...	...	...	...	7'6	...	0'7
Pulmonary Tuberculosis	...	...	1'7	2'2	...	...	...	1'1
Tuberculosis Diseases	...	...	...	...	...	...	...	...
Lobar Pneumonia	...	11'2	5'2	3'3	32'3	7'6	...	4'3
Other Respiratory Diseases	39'8	67'2	43'5	29'5	16'1	15'3	...	37'3
Dysentery	22'5	11'2	20'9	15'3	32'3	15'3	...	17'9
Diarrhoea	13'3	14'9	24'4	17'5	16'1	15'3	23'8	17'2
Hepatic Abscess	1'3	...	...	...	...	...	...	0'4
„ Congestion	5'3	7'5	8'7	8'7	16'1	...	...	7'5
Eye Diseases	1'3	...	3'5	3'3	...	...	...	2'1

Anæmia . . . . .	...	...	1'7	1'1	...	...	35'8	1'1
Abortion and other affections . . . . .	...	...	...	...	...	...	...	...
Affections connected with and consequent on parturition . . . . .	...	...	...	...	...	...	...	...
All other diseases peculiar to women . . . . .	...	...	...	...	...	...	...	...
Veneral Diseases . . . . .	...	...	1'7	...	...	...	...	0'4
ALL CAUSES	602'1	567'2	635'9	568'3	693'5	709'9	761'9	597'2
DEATHS.								
Cholera . . . . .	...	...	...	...	...	...	...	...
Small-pox . . . . .	...	...	1'74	...	...	...	...	0'36
Diphtheria . . . . .	...	...	1'74	...	...	...	...	0'36
Enteric Group of Fevers . . . . .	...	...	...	...	...	...	...	...
Malaria . . . . .	...	...	...	...	...	...	...	...
Pyæmia of uncertain origin . . . . .	...	...	...	...	...	...	...	...
Heart-stroke . . . . .	...	...	...	...	...	...	...	...
Circulatory Diseases	1'33	...	...	...	...	...	...	0'36
Pulmonary Tuberculosis . . . . .	...	...	...	...	...	...	...	...
Tuberculosis Diseases . . . . .	...	...	...	...	...	...	...	...
Convulsions . . . . .	...	...	...	...	...	...	...	...
Lobar Pneumonia . . . . .	...	3'73	...	1'09	...	...	...	0'72
Other Respiratory Diseases . . . . .	...	...	...	2'09	...	...	...	0'36
Teething . . . . .	...	...	...	...	...	...	...	...
Dysentery . . . . .	...	...	...	...	...	...	...	...
Diarrhœa . . . . .	...	...	...	...	...	...	...	...
Hepatic Abscess . . . . .	...	...	...	...	...	...	...	...
Anæmia, and Premature birth . . . . .	...	...	...	...	...	...	...	...
Abortion and affections connected with and consequent on parturition . . . . .	...	...	...	...	...	...	...	...
ALL CAUSES	5'98	7'46	6'97	5'46	...	7'63	...	5'38

TABLE X—continued.

STATISTICS OF OFFICERS, WOMEN AND CHILDREN—continued.

SICKNESS and MORTALITY among OFFICERS, WOMEN and CHILDREN of the BRITISH ARMY in India in 1923.

	WOMEN.							India.
	Northern Command.	Western Command.	Eastern Command.	Southern Command.	Burma Indpt. District.	Waziristan District.	Aden Brigade.	
STRENGTH	1,739	519	1,322	1,902	158	59	63	5,762
CASES REMAINING FROM 1922	5'8	5'8	4'5	6'3	...	...	...	5'4
INVALIDING	1'7	17'3	16'6	16'3	12'7	16'9	63'5	12'5
CONSTANTLY SICK	10'48	13'37	20'08	16'05	14'11	11'02	15'40	14'94
	ADMISSIONS.							
Influenza	3'4	...	3'0	1'1	...	...	...	2'1
Cholera	...	...	...	...	...	...	...	...
Small-pox	1'2	...	...	1'6	6'3	...	...	1'0
Measles	...	...	...	0'5	...	...	...	0'2
Whooping Cough	...	...	...	...	...	...	...	...
Enteric Group of Fevers	3'4	5'8	3'0	3'2	...	...	...	3'3
Malaria	62'7	44'3	40'8	45'2	6'3	84'7	...	48'2
Sandfly Fever	4'0	1'9	6'0	2'1	...	16'9	15'9	3'8
Pyrexia of uncertain origin	...	...	0'8	...	...	...	...	0'2
Pulmonary Tuberculosis	0'6	...	1'5	1'6	...	...	...	1'0
Tuberculosis Diseases	0'6	...	...	...	...	...	...	0'2
Lobar Pneumonia	...	...	0'8	1'1	...	...	...	0'5
Other Respiratory Diseases	14'9	21'2	43'1	16'8	12'7	16'9	...	22'4
Dysentery	8'6	21'2	4'5	10'5	6'3	...	...	9'2
Diarrhoea	12'7	7'7	19'7	123'1	25'3	...	...	17'4
Hepatic Abscess	1'7	...	...	...	...	...	...	0'5
„ Congestion	...	...	0'8	2'6	...	...	...	1'0
Eye Diseases	0'6	1'9	3'3	2'6	...	...	...	2'4

Anæmia	21'9	11'6	151'4	13'7	...	...	15'9	24'1
Abortion and other affections	53'5	131'0	84'0	51'0	82'3	50'8	79'4	67'7
Affections connected with and consequent on parturition	3'4	1'9	3'8	3'7	12'7	16'9	...	3'8
All other diseases peculiar to women	2'3	5'8	3'8	3'7	6'3	16'9	...	3'6
Venereal Diseases . . . . .	...	1'9	0'8	...	...	...	...	0'3
ALL CAUSES	356'5	468'2	605'9	426'9	329'1	305'1	365'1	445'9
DEATHS.								
Cholera . . . . .	...	...	...	...	...	...	...	...
Small-pox	0'58	...	...	...	...	...	...	0'17
Diphtheria . . . . .	...	...	...	...	...	...	...	...
Enteric Group of Fevers . . . . .	...	...	0'76	0'53	...	...	...	0'35
Malaria . . . . .	...	...	...	...	...	16'95	...	0'17
Pyrexia of uncertain origin . . . . .	...	...	...	...	...	...	...	...
Heat-stroke' . . . . .	...	...	0'76	0'53	...	...	...	0'35
Circulatory Diseases	0'58	...	0'76	...	...	...	...	0'35
Pulmonary Tuberculosis . . . . .	...	...	...	0'53	...	...	...	0'17
Tuberculosis Diseases . . . . .	...	...	...	...	...	...	...	...
Convulsions . . . . .	...	...	...	...	...	...	...	...
Lobar Pneumonia . . . . .	...	...	0'76	...	...	...	...	0'17
Other Respiratory Diseases . . . . .	...	...	...	...	...	...	...	...
Teething . . . . .	...	...	...	...	...	...	...	...
Dysentery	0'58	...	...	...	...	...	...	0'17
Diarrhœa . . . . .	...	...	...	...	...	...	...	...
Hepatic Abscess . . . . .	...	...	...	...	...	...	...	...
Anæmia, and Premature birth	0'58	...	...	...	...	...	...	0'17
Abortion and affections connected with and consequent on parturition . . . . .	...	...	2'27	1'58	...	...	...	1'04
ALL CAUSES	4'03	1'93	7'56	5'78	...	16'95	...	5'21

EUROPEAN TROOPS, 1923.

TABLE X—concluded.

STATISTICS OF OFFICERS, WOMEN AND CHILDREN.

SICKNESS and MORTALITY among OFFICERS, WOMEN and CHILDREN of the BRITISH ARMY in India in 1923.

	CHILDREN.							
	Northern Command.	Western Command.	Eastern Command.	Southern Command.	Burma Indpt. District.	Waziristan District.	Aden Brigade.	India.
STRENGTH								
CASES REMAINING FROM 1922	2,396 3'1	773 3'9	1,820 4'9	2,547 6'3	214 ...	37 ...	58 ...	7,845 4'2
INVALIDING								
CONSTANTLY SICK	0'4 6'03	2'6 9'53	0'5 12'66	2'0 10'49	9'3 6'35	... 4'05	... 4'31	1'4 9'35
	ADMISSIONS:							
Influenza	0'4	...	1'6	1'2	...	...	...	0'9
Cholera	...	...	...	...	...	...	...	...
Small-pox	0'4	...	...	0'4	...	...	...	0'3
Measles	1'3	59'5	7'1	19'6	...	...	...	14'3
Whooping Cough	4'2	3'9	1'1	2'0	4'7	...	17'2	2'8
Enteric Group of Fevers	2'9	2'6	3'3	0'4	...	...	...	2'0
Malaria	6'7	40'1	29'1	32'6	4'7	54'1	17'2	32'8
Sandfly Fever	11'3	...	3'3	...	...	27'0	51'7	1'7
Pyrexia of uncertain origin	...	...	...	0'4	...	...	...	0'1
Pulmonary Tuberculosis	...	...	...	0'4	...	...	...	0'1
Tuberculosis Diseases	0'4	1'3	2'7	0'8	...	...	...	6'1
Lobar Pneumonia	1'3	2'6	2'7	1'2	...	...	...	1'7
Other Respiratory Diseases	39'6	27'2	57'7	39'3	28'0	...	34'5	41'9
Dysentery	3'8	15'5	4'4	8'2	9'3	..	...	6'6
Diarrhoea	21'3	12'9	31'3	41'6	4'7	...	...	28'7
Hepatic Abscess	...	...	...	...	...	...	...	...
„ Congestion	...	...	1'6	...	...	...	...	0'4
Eye Disease	2'1	9'1	10'4	7'2	...	...	...	6'2

Anæmia	0'4	5'2	7'7	1'6	...	...	...	2'9
Abortion and other affections . . . . .	...	...	...	...	...	...	...	...
Affections connected with and consequent on parturition . . . . .	...	...	...	...	...	...	...	...
All other diseases peculiar to women . . . . .	...	...	...	...	...	...	...	...
Venereal Diseases . . . . .	...	1'3	2'2	0'4	...	...	...	0'8
ALL CAUSES	223'7	332'5	422'5	338'8	140'2	135'1	189'6	315'0
DEATHS.								
Cholera . . . . .	...	...	...	...	...	...	...	...
Small-pox . . . . .	...	...	...	0'39	...	...	...	0'13
Diphtheria	1'25	...	0'55	0'39	...	...	...	0'64
Enteric Group of Fevers	0'83	...	...	...	...	...	...	0'25
Malaria . . . . .	...	...	...	0'79	...	...	...	0'25
Pyrexia of uncertain origin . . . . .	...	...	...	...	...	...	...	...
Heat-stroke	0'42	...	...	0'39	...	...	...	0'25
Circulatory Diseases . . . . .	...	...	...	0'79	...	...	...	0'25
Pulmonary Tuberculosis . . . . .	...	...	...	0'39	...	...	...	0'13
Tuberculosis Diseases . . . . .	...	...	...	0'79	...	...	...	0'25
Convulsions	0'83	...	...	1'18	4'67	...	...	0'76
Lobar Pneumonia	0'42	1'29	0'55	0'79	...	...	...	0'64
Other Respiratory Diseases	1'67	1'29	4'40	0'79	...	...	...	1'91
Teething	0'42	...	...	...	...	...	...	0'13
Dysentery	1'67	...	1'10	0'79	...	...	...	1'02
Diarrhœa . . . . .	...	...	0'55	1'96	...	...	...	0'76
Hepatic Abscess . . . . .	...	...	...	...	...	...	...	...
Anæmic and Premature birth . . . . .	...	...	...	...	...	...	...	...
Abortion and affections connected with and consequent on parturition . . . . .	...	...	...	...	...	...	...	...
ALL CAUSES	18'78	7'76	17'58	19'63	4'67	...	...	17'08

EUROPEAN TROOPS, 1928.

TABLE XI.
CHILDREN, 1923.
DEATHS OF CHILDREN BY AGES AND CAUSES.

AGE AT DEATH.	Cholera.	Small-pox.	Diphtheria.	Enteric group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Tubercular Diseases.	Convulsions.	Respiratory Diseases.	Teething.	Dysentery.	Diarrhoea.	Anæmia, Inanition and Immaturity at birth.	ALL CAUSES.	Average Annual Strength.	Death rate per 1,000 of strength.	Liability. (The previous columns expressed in percentages.)
Under 6 months	1	..	..	1	..	..	1	6	..	..	2	10	16	804	57'21	39'78
Between 6 and 12 months	1	3	9	..	..	4	..	40	920	42'55	29'59
" 12 and 18 "	3	..	..	..	1	3	1	..	1	..	..	20	863	23'17	16'11
" 18 and 24 "	4	..	2	..	..	7	909	7'70	5'35
" 2 years and 5 years	1	2	..	..	1	..	..	..	4	..	..	13	1,742	7'46	5'19
" 5 " and 10 "	1	..	1	..	..	..	1	..	..	..	..	7	1,574	4'45	3'09
" 10 " and 15 "	1	..	..	1	780	1'28	0'89
" 15 " and upwards	253	..	..
TOTAL	1	5	2	2	..	3	7	21	..	8	6	10*	134	7,845	17'08	..

* Immaturity at birth—10.

II.—INDIAN TROOPS, 1923.

TABLE C.

STATIONS by COMMANDS and INDEPENDENT DISTRICTS.

STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.	STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.	STATIONS.	Height above M. S. level in feet.	Authority for height.	Points of reference.
NORTHERN COMMAND—				Naini Tal	6,400	S. D.	Map.				
Abbottabad	4,010	S. D.	Map.	Roorkee	870	"	S. B. M.				
Ali Masjid (Fort)	3,174	"	"	Shillong	4,921	"	Map.				
Ambala	902	"	S. B. M.	Sitapur	447	"	S. B. M.				
Amritsar	754	"	"	Takdah (Officers Mess)	5,275	"	B. M.				
Attock	1,112	"	"	SOUTHERN COMMAND—							
Bakloh	4,585	"	Map.	Ahmednagar	2,180	"	Map.				
Campbellpore	1,180	"	"	Aurangabad	1,205	M. D.	"				
Chakdara	2,358	"	"	Babugarh (Hapur) R.	675	S. D.	Map.				
Cherat	4,546	"	"	Depot		"	"				
Chitral	4,980	"	"	Bangalore	3,002	"	S. B. M.				
Dargai	1,540	"	Ry. Stn.	Belgaum	2,528	"	"				
Dharmasala Cantt.	4,500	"	Map.	Bombay (Town Hall)	20	"	"				
Ferozepore	649	"	S. B. M.	Cannanore	40	"	"				
Fort Jamrud (Highest Tower).	1,607	"	Ht.	Deolali	1,894	"	S. B. M.				
Fort Lockhart	6,613	"	Tower.	Jhansi	849	"	"				
Hangu	2,708	"	Map.	Jubbulpore	1,320	"	"				
Ihelum	762	"	"	Kamptee (Ry. Station)	940	"	"				
Jullundur Cantt.	771	"	S. M. B.	Kirkee	1,855	"	S. B. M.				
Jutogh	6,370	"	B. M.	Mhow (Ry. Station)	1,887	"	"				
Kalabagh and Baragali	7,963	"	Map.	Neemuch	1,613	"	"				
Khyragali	7,678	"	"	Nowgong	735	"	Map.				
Kila Drosh	4,340	"	"	Pachmarhi	3,490	"	"				
Kohat	1,725	"	"	Poona	1,867	"	"				
Lahore Cantonment	706	"	S. M. B.	Santa Cruz (Ry. Station)	21	"	S. B. M.				
Landi Kotal	3,509	"	Map.	Satara	2,203	"	"				
Malakand	2,740	"	"	Saugor	1,755	"	"				
Mardan	1,000	"	"	Secunderabad	1,776	"	"				
Mona	Not available	"	"	St. Thomas' Mt. (Ry. Station).	34	"	"				
Multan	404	S. D.	S. B. M.	Madras (Obsy)	250	"	"				
Murree	7,073	"	Map.	Trichinopoly	256	"	"				
Nowshera Ry. Station	966	"	B. M.	Trivandrum	50	"	"				
Peshawar	1,152	"	S. B. M.	Wellington Stn. Hospl.	5,800	"	Map.				
Rawalpindi	1,639	"	"								
Risalpur	1,014	"	B. M.								

Sialkot	829	S. D.	B. M.				
Simla	7,234	"	"				
Sargodha Ry. Rest House	615	"	"				
Subathu	4,000	"	Map	BURMA INDEPENDENT DISTRICT—			
Thal	2,450	"	"	Mandalay (Fort Dufferin).	246	S. D.	...
WESTERN COMMAND—				Maymyo	3,508	"	Map.
Ahmedabad	162	"	S. B. M.	Meiktila	776	"	S. B. M.
Ajmer	1,627	"	Map.	Port Blair (Tidal Obsy)	9	"	B. M.
Baroda Cantt.	114	"	B. M.	Rangoon (Custom House-flag staff).	17	"	S. M. B.
Chaman Fort	5,502	"	Map.				
Daibandin My. Tel. Office	2,776	"	"	WAZIRISTAN DISTRICT—			
Deesa	466	"	S. B. M.	Asad Khel	4,000	S. D.	New Camp.
Fort Sandeman	4,600	"	Map.	Bannu	1,250	"	Map.
Harsai	2,860	"	"	Dardoni	3,036	"	"
Hindubagh	5,821	"	"	Dera Ismail Khan	568	"	S. B. M.
Hyderabad (Sind)	96	"	S. B. M.	Idak	2,477	"	Map.
Karachi Holy Trinity Church.	28	"	"	Jandola	2,274	"	"
Loralai	4,699	"	Map.	Kalabagh and Mari Indus	682	"	"
Murgha and Lakaband	5,012	"	"	Khirgi	1,835	"	"
Nasirabad	1,461	"	"	Kotkai	5,140	"	"
Pishin (Fort)	5,157	"	"	Manzai	1,650	"	"
Quetta	5,510	"	S. B. M.	Piazha Raghza	4,600	"	"
Rajkot	424	"	"	Razani	5,750	"	"
EASTERN COMMAND—				Razmak	6,556	"	"
Agra (Fort)	525	"	S. B. M.	Saidgi	1,810	"	"
Allahabad	314	"	"	Sora Rogha	5,543	"	"
Almora	5,494	"	Map.	Tank	880	"	"
Barcilly	563	"	S. B. M.	Wana	4,565	"	"
Benares	256	"	"				
Calcutta (Alipore)	17	"	B. M.	EXTRA INDIA—			
Cawnpore	407	"	"	Aden. Near Port Engr.'s Office.	7	"	S. B. M.
Chakrata	6,885	"	Map.	Bushire	36	"	B. M.
Dehra Dun	2,232	"	S. B. M.	Kameron . . . . .	...	"	"
Delhi	757	"	"	Perim, (Near blacksmith's shop and 19 feet from reservoir).	5	S. D.	B. M.
Dinapore	170	"	Church.				
Fatehgarh	467	"	"				
Fyzabad	330	"	S. B. M.				
Ghoom	7,318	"	In. of road.				
Gyantse	13,120	"	Map.				
Gorakhpur	255	"	S. B. M.				
Lansdowne	5,823	"	Map.				
Lucknow (Kalubir)	383	"	B. M.				
Meerut	737	"	S. B. M.				
Muttra	560	"	"				

S. D. = Survey Department.
S. B. M. = Standard Bench Mark.

Map. = Heights taken from Topo Maps.
M. D. = Meteorological Department.

TABLE XII.

RATIOS OF COMMANDS AND INDEPENDENT DISTRICTS.

The ratios of admissions and deaths to strength are taken from Table XIV.

	RATIO PER 1,000 OF THE AVERAGE STRENGTH.							
	Northern Command.	Western Command.	Eastern Command.	Southern Command.	Burma District.	Waziristan District.	Aden Brigade and Bushire.	* Army of India.
I.—AVERAGE ANNUAL STRENGTH	44,802	18,806	22,264	19,642	4,814	27,459	2,284	143,234
II.—CONSTANTLY SICK	16·81	16·23	17·05	21·73	36·08	29·84	35·23	20·63
III.—ADMISSION RATE OF THE YEAR—								
Influenza	2·5	4·6	3·8	3·6	...	3·8	...	3·2
Cholera . . . . .	...	...	0·1	0·1	...	...	...	0·0
Small-pox	0·2	0·1	0·1	0·2	...	0·0	...	0·1
Enteric group of fevers	0·8	0·4	0·9	0·4	0·2	0·1	0·4	0·5
Malaria	206·9	74·5	119·8	105·9	101·0	189·3	344·6	158·1
Sandfly Fever	20·9	7·8	2·9	0·8	...	12·1	102·5	12·1
Pyrexia of uncertain origin	0·0	0·1	0·1	0·2	0·2	0·3	...	0·2
Plague	0·8	...	...	0·6	...	...	...	0·3
Pulmonary Tuberculosis	2·9	2·2	5·0	2·7	3·3	3·6	1·3	3·2
Lobar Pneumonia	11·1	8·8	6·5	3·5	6·0	15·4	3·9	9·5
Other Respiratory Diseases	31·7	31·4	29·0	30·7	82·1	41·9	25·0	34·8
Dysentery	8·9	7·5	6·2	8·8	9·8	5·5	...	7·3

Diarrhoea	13'0	14'4	13'3	13'6	3'1	15'0	40'7	13'6
Hepatic { Abscess	0'0	0'2	0'1	...	...	0'1	...	0'1
{ Congestion and Inflammation	0'6	0'3	0'5	1'7	1'7	0'7	0'4	0'7
Scurvy	0'0	0'2	...	0'3	...	0'3	...	0'1
Veneral Diseases	14'6	19'5	32'9	44'2	98'3	10'7	13'6	24'0
ALL CAUSES	465'4	350'7	408'7	477'2	765'5	497'9	884'4	466'7

V.—DEATH RATE OF THE YEAR—

Cholera . . . . .	...	...	...	0'05	...	...	...	0'01
Small-pox . . . . .	...	...	...	...	...	...	...	...
Enteric group of fevers	0'02	0'11	0'13	...	...	0'04	...	0'05
Malaria	0'40	0'16	0'18	0'10	0'21	2'44	0'44	0'69
Sandfly Fever . . . . .	...	...	...	...	...	...	...	...
Pyrexia of uncertain origin . . . . .	...	...	0'04	...	...	...	...	0'01
Plague	0'31	...	...	0'25	...	...	...	0'13
Circulatory Diseases	0'16	0'32	0'09	0'25	0'83	0'26	...	0'22
Pulmonary Tuberculosis	0'27	0'05	0'13	0'10	0'62	0'26	...	0'20
Lobar Pneumonia	1'67	0'75	0'90	0'51	1'45	3'79	0'88	1'77
Other Respiratory Diseases	0'42	0'48	0'36	0'46	1'25	1'03	...	0'73
Dysentery	0'09	0'16	0'13	...	...	0'29	...	0'13
Diarrhoea . . . . .	...	...	...	...	...	...	...	...
Hepatic Abscess . . . . .	...	...	...	...	...	...	...	...
Anæmia	0'04	0'05	...	0'15	...	0'22	...	0'03
ALL CAUSES	4'78	4'84	3'14	3'26	9'14	12'42	2'63	5'98

* Including mobile column Wana.

TABLE XII.

RATIOS of GEOGRAPHICAL GROUPS.

The ratios of admissions and deaths to strength are taken from Table XIV.

	RATIO PER 1,000 OF THE AVERAGE STRENGTH.												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Army of India.*
	Burma Coast and Bay Islands.	Burma Inland.	Assam.	Bengal and Orissa.	Gangetic Plain and Chutia Nagpur.	Upper Sub-Himalaya.	VII N.-W. Frontier, Indus Valley, and N.-W. Rajputana.	VIII S.-E. Rajputana, Central India, and Gujarat.	Decan.	Western Coast.	South-ern India.	Hill Stations.	
I.—AVERAGE ANNUAL STRENGTH	1,108	1,739	...	954	6,546	26,975	47,142	7,383	10,443	2,572	3,986	28,939	143,234
II.—CONSTANTLY SICK RATE	25'13	32'82	...	24'28	17'05	19'28	18'24	14'22	20'78	27'89	21'12	26'97	20'63
III.—ADMISSION RATE OF THE YEAR—													
Influenza . . . . .	...	...	...	...	0'2	2'2	3'7	10'0	4'4	3'9	3'8	2'8	3'2
Cholera . . . . .	...	...	...	1'0	...	...	...	...	...	0'4	...	0'0	0'0
Small-pox . . . . .	...	...	...	...	0'2	0'1	0'0	0'3	0'2	0'4	...	0'1	0'1
Enteric group of fevers	0'9	...	...	2'1	0'9	1'3	0'3	0'7	0'1	1'2	...	0'3	0'5
Malaria	39'7	164'5	...	224'3	88'9	230'4	161'0	78'6	107'2	126'0	89'8	130'9	158'1
Sandfly Fever . . . . .	...	...	...	...	4'9	16'6	16'8	1'4	1'4	...	...	6'9	12'1
Pyrexia of uncertain origin	0'9	...	...	...	0'2	0'1	0'1	0'3	...	...	1'0	0'0	0'2
Plague . . . . .	...	...	...	...	...	0'1	0'7	...	0'8	...	1'0	...	0'3
Pulmonary Tuberculosis	5'4	2'3	...	1'0	4'3	4'2	2'4	1'4	2'5	3'5	3'3	4'4	3'2
Lobar Pneumonia	5'4	2'3	...	10'5	7'2	7'9	13'7	6'9	3'2	5'5	2'3	10'3	9'5
Other Respiratory Diseases	43'3	24'2	...	40'9	27'0	26'7	37'5	22'5	22'5	76'6	31'1	44'6	34'8
Dysentery	13'5	18'4	...	18'9	10'8	10'2	4'5	3'8	10'9	13'6	4'3	7'9	7'3

Diarrhoea	3'6	4'0	...	17'8	11'6	12'2	15'8	8'0	10'2	47'4	3'3	12'6	13'6
Hepatic { Abscess Congestion and Inflammation . . . . .	...	...	...	...	...	0'4	0'1	...	...	...	...	0'1	0'1
Scurvy . . . . .	...	...	...	...	...	0'7	0'5	0'4	1'9	0'8	2'0	0'7	0'7
Venereal Diseases	32'3	148'9	...	29'3	25'7	29'7	12'6	20'7	50'2	20'2	53'9	18'4	24'0
ALL CAUSES	458'5	792'4	...	764'1	215'5	502'6	443'3	350'1	465'5	891'0	462'1	438'9	466'7

IV.—DEATH RATE OF THE YEAR—

Cholera . . . . .	...	...	...	...	...	...	...	...	...	0'39	...	...	0'01
Small-pox . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Group of Fevers . . . . .	...	...	...	...	...	0'11	0'02	...	...	...	...	0'10	0'05
Malaria . . . . .	...	...	...	...	...	0'52	1'6	0'27	0'19	...	...	0'93	0'69
Sandfly Fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyrexia of uncertain origin . . . . .	...	...	...	...	0'15	...	...	...	...	...	...	...	0'01
Plague . . . . .	...	...	...	...	...	0'07	0'25	...	0'29	...	0'50	...	0'13
Circulatory Diseases	0'99	1'73	...	...	0'15	0'19	0'17	...	0'29	0'78	...	0'28	0'22
Pulmonary Tuberculosis . . . . .	...	0'58	...	...	...	0'19	0'13	0'14	0'19	...	...	0'45	0'20
Lobar Pneumonia . . . . .	...	0'58	...	...	1'22	0'82	3'01	0'54	0'67	...	0'50	2'18	1'77
Other Respiratory Diseases . . . . .	...	1'15	...	...	0'46	0'56	0'08	0'41	0'57	0'78	...	0'03	0'73
Dysentery . . . . .	...	...	...	...	...	0'21	0'21	0'14	...	...	...	10'31	0'13
Diarrhoea . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Hepatic Abscess . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia . . . . .	...	...	...	...	...	...	0'11	0'14	0'10	0'39	...	0'14	0'08
ALL CAUSES	2'71	7'48	...	4'19	2'75	3'78	7'85	3'12	4'02	3'11	2'01	8'05	5'98

*Including Group Extra India and Wana mobile column.

TABLE XIV.

RATIOS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.															2. DRATH RATE.										
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heat stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancre.	Gonorrhœa.
Port Blair	131	129.8	..	7.6	15.3	15.3	61.1	450.4	14.65
Rangoon	977	..	..	..	1.0	27.6	..	..	..	..	7.2 1.02	4.1	4.1	40.9	15.4	4.1	..	1.0	..	2.0	59.4	489.6 3.07	26.53	9.2	23.5	26.6
GROUP 1.— BURMA COAST AND BAY ISLANDS.	1,108	..	..	..	0.9	39.7	..	0.9	..	..	6.3 0.90	5.4	5.4	43.3	13.5	3.6	..	0.9	..	1.8	52.3	458.5 2.71	25.13	8.1	20.8	23.5
Meiktila	413	..	..	..	..	193.7	..	..	..	..	2.4 2.42	2.4	7.3	4.8	7.3	12.1	..	..	..	..	135.6	799.0 4.84	34.79	48.4	36.3	50.8
Fort Dufferin (Mandalay)	1,316	..	..	..	..	155.4	..	..	0.8	..	18.1 2.26	2.3	0.8 0.75	30.2 1.51	21.9	1.5	..	4.5	..	1.5	153.1	790.3 8.30	32.20	49.0	46.0	58.1

GROUP II.— BURMA INLAND	1,739	164'5	0'6	14'4	2'3	2'3	24'2	18'4	4'0	...	3'5	...	1'1	148'9	792'4	7'48	32'82	48'9	43'7	56'4
Alipore (Calcutta)	554	...	1'0	...	2'1	224'3	...	...	1'0	1'05	...	1'0	10'5	40'9	18'9	17'8	...	...	...	1'0	29'3	764'1	4'19	24'28	9'4	10'5	9'4
GROUP IV.— BENGAL AND ORISSA	554	...	1'0	...	2'1	224'3	...	...	1'0	1'05	...	1'0	10'5	40'9	18'9	17'8	...	...	...	1'0	29'3	764'1	4'19	24'28	9'4	10'5	9'4

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.											2. DEATH RATE.														
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heat stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All causes.	Constantly Sick Rate.	Syphilis.	Soft Chancere.	Gonorrhoea.
Dinapore	50	...	...	...	20'0	40'0	...	...	...	...	...	...	...	40'0	...	...	...	...	...	...	40'0	300'0	18'60	...	20'0	20'0
Benares	708	...	...	...	...	66'4	...	...	...	...	1'4	2'8	12'7	10'8	...	5'6	...	...	...	1'4	4'2	265'5	12'87	2'8	1'4	...
Allahabad	945	...	...	...	...	131'2	...	...	...	...	...	5'3	10'6	21'2	4'2	5'3	...	...	...	...	42'3	369'3	14'80	24'3	8'5	9'5
Fyzabad	802	1'2	...	...	...	34'9	27'4	...	1'2	...	8'7	2'5	5'0	24'9	11'2	26'2	...	...	...	6'2	22'4	300'5	17'83	6'2	3'7	12'5
Lucknow	2,848	...	...	0'4	1'4	111'7	3'5	...	1'4	0'4	1'1	3'5	3'9	27'7	16'5	12'3	...	0'4	...	6'7	30'5	517'6	19'73	13'7	3'2	13'7
Cawnpore	112	...	...	...	...	232'1	...	...	...	...	...	16'8	...	125'0	44'6	26'8	...	...	...	...	44'6	1,026'8	31'25	17'9	17'9	8'9
Fatehgarh	848	...	...	...	1'2	38'9	...	1'2	10'6	...	1'2	4'7	15'3	28'3	7'1	5'9	...	...	...	1'2	8'3	300'7	12'56	2'4	...	5'9
Sitapur	233	...	...	...	...	17'2	...	...	4'3	...	...	8'6	...	17'2	...	12'9	...	...	...	...	25'8	356'2	11'33	8'6	4'3	12'9
GROUP V.— GANGETIC PLAIN AND CHUTIA NAGPUR.	6,546	0'2	...	0'2	0'9	88'9	4'9	0'2	0'9	1'5	...	7'8	4'3	7'2	27'0	10'8	11'6	...	0'2	...	4'0	25'7	415'5	17'05	11'5	3'8	10'4

A																													
Bareilly	2,192	...	...	...	128'6	0'5	...	0'5	...	3'2	4'6	3'2	27'8	...	10'0	...	...	0'9	47'0	1'07'8	15'23	15'5	15'5	16'0	
Roorkee	2,354	7'6	...	0'4	1'3	0'91	...	0'8	...	0'46	...	0'40	0'6	...	...	...	0'9	47'0	1'07'8	15'23	15'5	15'5	16'0			
Dehra Dun	2,219	...	...	...	160'4	2'3	0'5	...	...	0'5	14'0	7'2	20'7	0'5	12'6	...	...	0'9	43'3	425'9	19'80	16'0	12'6	12'6	
Meerut	2,355	...	...	...	45	40'8	8'1	...	0'8	...	1'3	3'8	4'7	28'0	0'8	15'7	0'4	0'4	...	66'2	2'6'4	17'97	26'3	21'7	18'3	
Delhi	1,457	...	...	...	116'0	0'7	...	1'4	3'4	...	2'7	2'1	3'4	15'8	4'8	19'2	1'4	2'1	...	3'9	370'6	16'18	8'2	6'2	16'5	
Ambala	1,652	12'1	...	...	795'4	7'9	...	1'8	...	1'8	3'0	3'6	9'7	12'7	11'5	0'6	1'2	...	2'4	32'7	110'5	26'20	13'3	3'0	16'3		
B																													
Jullundur	1,386	...	...	...	188'3	13'0	...	...	...	1'4	6'5	8'7	22'4	...	2'2	...	...	...	18'8	411'3	17'11	9'4	1'4	7'9	
Ferozepore	2,036	...	...	...	391'9	11'3	...	1'0	0'5	...	1'5	1'5	5'4	15'3	25'5	6'4	...	1'5	...	0'3	10'3	5'05	...	...	...	
Lahore Cantonment	2,203	9'5	...	0'5	397'2	15'9	...	...	...	2'3	5'4	11'2	19'5	41'8	5'9	...	0'9	...	0'9	24'1	756'7	15'17	...	...	4'9
Amritsar	914	...	...	...	295'4	14'2	1'1	1'1	...	2'2	1'1	9'8	28'4	...	9'8	...	2'2	...	6'6	46'0	610'5	29'90	...	6'8	5'0	
Sialkot	1,483	...	...	0'7	174'0	53'9	...	2'0	0'7	0'7	2'0	2'0	8'8	28'3	3'4	3'4	...	...	...	14'2	468'0	21'45	17'5	14'2	14'2
Jhelum	2,223	...	...	...	152'9	59'8	...	0'4	0'9	0'4	4'0	6'3	8'5	41'4	12'6	5'8	...	...	2'2	13'0	425'6	22'73	4'0	2'7	7'4
Rawalpindi	3,535	...	...	0'3	281'8	29'7	...	2'0	...	0'6	2'0	1'4	13'9	58'0	14'4	26'6	...	...	3'1	22'3	614'1	17'34	5'4	5'4	2'2
Attock	167	...	...	...	149'7	...	...	...	...	0'28	0'57	...	0'85	0'57	0'28	...	...	...	...	24'0	215'6	24'00	8'2	5'9	8'2
Campbellpore	670	...	...	...	58'2	...	...	...	...	1'5	1'5	19'4	17'9	7'5	11'9	...	3'0	...	...	25'4	244'8	4'85	18'0	6'0	...
Mona	47	...	...	...	42'6	21'3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	319'1	7'91	10'4	3'0	11'9
Sargodha	82	...	...	...	61'0	12'2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	280'5	10'43	...	...	...	
GROUP VI.— UTTER KH SUB- HIMALAYA.		26,973	2'2	...	0'1	1'3	230'4	16'6	0'1	0'9	0'2	0'1	1'9	4'2	7'9	26'7	10'2	12'2	0'1	0'7	...	1'4	2'7	502'6	
			0'11	0'52	0'04	0'07	0'19	0'19	0'82	0'56	0'11	3'78	19'28	11'3	7'9	10'5

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heatstroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick rate.	Syphilis.	Soft Chancres.	Gonorrhœa.	
A																												
Mardan	2,247	...	...	...	0.4	37.8	4.5	...	0.4	...	13.4	3.6	2.7	6.7	16.5	5.3	0.4	...	0.4	...	1.3	5.3	100.5 6.58	6.95	2.2	0.4	2.7
Nowshera	2,991	...	...	0.3	0.3	149.4	5.0	...	1.0	0.3	...	1.7	0.7	8.4	28.4	1.7	17.4	...	...	...	1.3	14.7	469.4 2.67	19.50	5.3	2.7	6.7
Peshawar	3,599	0.8	...	...	0.3	196.4 0.28	2.2	...	0.6	...	...	2.5	1.7	14.4	24.5	13.3	22.2	...	0.6	0.3	1.7	22.2	4.9.6 7.50	14.23	6.9	5.0	10.3
Fort Jamrud	929	...	...	...	...	79.7	16.1	...	...	...	...	2.2	3.2	9.7	21.5	7.5	59.2	...	...	...	...	17.2	307.9 7.53	11.60	5.4	0.5	5.4
Kohat	3,366	...	...	...	0.3	208.0 0.59	2.7	...	0.6	0.6	...	0.3	2.4	15.7 2.67	19.0	7.1	10.7	...	...	...	...	5.9	415.9 3.86	14.79	0.6	0.9	4.5
Thal	216	...	...	...	...	550.9 4.63	...	...	...	...	...	...	...	18.5	37.0	...	18.5	...	...	...	...	...	675.9 4.63	15.88	...	..	...
Bannu	2,650	...	...	...	...	213.3 4.53	46.4	...	1.1	4.2	...	1.5	3.8	25.7 3.40	56.6	1.5	38.9	...	1.9	0.4	0.3	16.6	618.1 14.34	53.08	7.5	2.6	6.4

Dera Ismail Khan.	1,602	143'6 1'87	36'2	0'6	...	1'2	1'2	13'1 2'30	19'4 1'25	10'0	7'5	...	0'6	...	0'6 1'25	27'5	51'0 9'36	81'37	10'6	3'1	13'7
Tank . . .	1,046	...	...	...	...	97'5 3'52	1'0	...	...	...	1'0 1'91	4'8	30'6 4'78	40'2 1'91	2'9	2'9	...	...	...	...	12'4	321'7 14'34	22'19	6'7	1'9	3'8
Ali Masjid .	762	...	...	...	...	1'3	136'5	32'8	...	...	2'6	2'6	24'9 3'94	24'9 1'31	9'2	22'3	...	...	...	...	9'2	345'1 6'56	10'68	2'6	3'9	2'6
Dardoni . . .	753	270'9 2'66	13'9	...	2'7	...	1'3	...	15'9 13'28	61'4 5'31	8'0	9'3	2'7	9'3	556'4 26'56	52'89	4'0	1'3	4'0
Idak . . .	897	...	...	...	...	207'4 1'11	2'2	...	...	...	2'2	2'2	31'2 7'60	19'0	7'8	12'3	...	1'1	...	2'2	13'4	435'9 10'03	9'17	2'2	7'8	5'3
Multan . . .	1,800	...	...	...	...	70'0	11'7	...	...	0'6	1'7	2'8	8'3	21'7	1'7	0'6	...	...	...	...	6'1	229'4 0'50	7'94	1'7	...	4'4
Risalpur . . .	1,130	0'9	95'6	18'6	...	1'8	0'9	...	3'5	6'2 6'88	16'8	3'5	0'9	1'8	12'4	424'8 0'88	17'27	3'5	8'0	0'9
Landi Kotal .	2,555	25'0	...	...	0'8	98'6 0'39	132'7	...	...	...	...	2'3	9'4 0'39	82'2	1'6	30'9	...	...	...	14'1	8'6	517'8 3'91	16'76	2'0	2'7	3'9
Kalabagh and Mari Incus.	598	...	...	...	1'7 1'67	232'4 3'34	1'7	1'7	1'7	...	1'7	3'3 1'67	1'7	36'8	1'7	15'1	...	...	...	1'7	21'7	490'0 11'71	14'85	3'3	5'0	13'4
Razmak . . .	3,422	30'1 3'51	91'5 0'29	...	0'3	1'2	0'6	...	2'0 0'58	2'0	10'8 4'09	34'2 0'88	4'4 0'29	19'0	...	0'3	0'3	0'6	9'4	345'1 15'49	7'76	4'1	0'6	4'7
Razani . . .	2,609	...	...	...	...	18'4	...	...	1'1	...	2'7	...	5'4 0'77	18'4 0'38	...	1'9	...	0'4	...	1'9	5'0	121'5 2'68	3'04	2'7	1'1	1'1
Piazza Raghza	2,452	0'8	...	...	...	127'2 0'41	...	...	0'4	...	...	6'5	3'3	15'9 4'68	83'2 4'89	1'6 0'41	4'5	...	0'4	...	8'6	451'5 12'64	11'40	3'3	1'2	4'1
Sora Rogha .	3,562	0'3	217'3 1'40	1'1	5'6	2'5	15'4 3'65	36'8 0'56	3'1	0'8	...	0'3	...	4'2	6'5	530'0 7'02	17'12	3'4	1'4	1'7
Kotkai . . .	1,643	275'7 3'65	0'6	3'0	3'0	17'0 1'22	63'3 1'22	1'8	15'8	13'4	6'1	584'3 6'09	13'54	2'4	1'8	1'8

INDIAN TROOPS, 1923.

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rhumatic Fever.	Heat stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Venereal Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancre.	Gonorrhœa.	
Khirdi . . .	2,601	...	...	0'4	...	206'1 1'54	15'4	1'9	0'4	...	...	7'3	1'2	9'2 3'08	40'4 0'77	0'4	9'6	0'8	...	0'8	15'0	11'5	534'8 0'54	7'50	3'5	2'3	5'8
B																												
Jandola . . .	1,179	...	...	...	...	353'7 2'54	53'4	...	...	...	...	6'8 0'88	10'2	41'6 9'33	45'0 3'39	6'8	26'3	...	0'8	0'8	16'1	7'6	773'5 16'6	18'54	2'5	1'7	3'4
Saidgi . . .	414	...	...	...	...	130'4	9'7	...	...	4'8	...	...	...	4'8	14'5	24'2	16'9	...	9'7	...	4'8	2'4	444'4	10'41	...	1'00	2'4
C																												
Asad Khel . . .	741	...	...	...	...	632'9 1'35	21'9	...	...	...	...	...	...	16'8 4'05	44'5 4'03	14'8	103'9	...	...	...	31'0	4'0	1094'5 12'15	16'56	...	1'3	2'7
Hyderabad (Sind).	410	2'4	...	...	4'9	61'0	...	...	...	...	...	2'4	12'2	...	14'6	...	4'9	...	4'9	...	4'9	41'5	334'1 4'88	16'27	17'1	7'3	17'1
Karachi . . .	968	...	...	...	...	43'4	...	...	1'0	...	4'1 1'03	3'1	...	62'0	...	20'7	2'1	1'0	...	7'2	80'6	503'1 4'13	25'15	33'1	24'8	22'7	

GROUP VII.
—N.-W.
FRONTIER,
INDUS
VALLEY,
AND NORTH-
WESTERN
RAJPUTANA.

	47,142	3'7 0'25	...	0'0	0'3 0'02	161'0 1'06	16'8	0'1	0'6 0'02	0.4	0'7 0'25	2'7 0'17	2'4 0'13	13'7 3'01	37'5 0'95	4'5 0'11	15'8	0'1	0'5 0'02	0'1	4'1 0'11	12'6	443'3 7'85	18'20	4'3	0'8	5'3
A																											
Rajkot	898	{	...	...	1'1	...	13'5	...	...	...	...	1'1	...	3'4 1'13	29'3	...	7'9	...	...	...	2.3	9'0	263'5 1'11	9'72	1'1	1'1	6'8
Deesa	404	{	...	...	...	66'8	5'0	...	...	...	2'5	5'0	5'0	27'2	2'5	...	...	...	...	...	24'8	287'1 2'48	9'38	...	5'0	19'8	
Ahmedabad	719	{	...	...	...	155'5 1'39	...	1'4	...	...	2'8	1'4	11'1	33'4	...	20'9	...	...	...	...	7'0	382'5 1'39	13'14	2'8	1'4	2'8	
Baroda	613	{	...	...	...	40'5	1'6	...	...	...	...	...	4'9	8'1	...	...	...	...	...	...	9'7	132'7 3'21	4'84	8'1	1'6	...	
B																											
Neemuch	104	{	...	...	...	49'0	6'8	...	10'6	...	...	...	9'8	9'8	...	...	...	...	...	...	107'8	563'6	30'20	49'0	9'8	49'0	
Nasirabad	939	{	78'8	...	...	27'7	...	...	...	...	...	...	9'6 2'13	12'8 1'06	13'8	14'9	...	...	...	...	14'9	328'0 6'39	13'26	3'2	7'5	4'3	
Ajmer	674	{	...	...	...	5'9	...	1'5	...	1'5 1'48	...	...	1'5 1'48	1'5	41'0 1'48	...	8'9	...	...	...	4'5	7'4	270'0 5'93	9'21	...	4'5	3'0
Muttra	14	{	...	...	...	142'9 71'43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71'4	428'6 21'43	12'14	71'4	...	...
Agra	879	{	...	...	1'1	133'1	6'8	...	1'1	...	...	...	3'3	9'1	30'7	11'4 1'14	...	...	...	...	1'1	36'4	387'9 2'25	13'79	22'8	8'0	5'7

INDIAN TROOPS, 1923.

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.													2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heat Stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancre.	Gonorrhœa.
Jhansi . . .	1,242 {	...	...	...	2'4	118'4	...	...	0'8	0'8	...	1'6	1'6	3'2	14'5	...	3'2	...	0'6	2'4	2'4	23'3	412'2	17'26	3'2	8'1	12'1
Nowgong . . .	40 {	...	...	...	...	25'0	...	...	...	...	...	...	...	...	...	25'0	...	...	...	...	25'0	25'0	400'0	15'00	...	...	25'0
Babugarh (Hapur).	45 {	...	...	...	...	22'2	...	...	...	...	...	...	...	...	22'2	...	...	...	...	...	...	1866'7	41'56	...	...	...
Mhow . . .	519 {	...	...	1'2	1'2	123'3	...	...	...	...	2'4	2'4	14'7	14'7	4'9	14'7	...	2'4	...	1'2	37'9	453'0	27'07	12'2	7'3	18'3	
GROUP VIII— SOUTH- EASTERN RAJPUTANA, CENTRAL INDIA, AND GUJARAT.	7,383 {	10'0	...	0'3	0'7	78'6	1'4	0'3	0'5	0'3	...	1'1	1'4	6'9	22'5	3'8	8'6	...	0'4	0'4	1'2	20'7	350'1	14'22	6'9	5'3	8'5
		...	...	...	...	0'27	...	...	...	0'27	...	...	0'41	0'54	0'41	0'14	...	...	...	0'14	...	3'12	...	...	...	...

INDIAN TROOPS, 1923.

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.											
		Influenza.	Cholera.	Small-pos.	Enteric Group of Fevers.	Malaria.	Sandy fever.	Pyrexia of uncertain origin.	Rheumatic fever.	Heat-Stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancre.	Gonorrhœa.
Poona . . .	1,402 {	0'7	44'9	2'9	...	1'4	4'3	...	2'9	28'5	23'5	12'8	...	3'6	...	1'4	64'2	539'2	28'35	27'8	16'4	20'0
Kirkee . . .	1,924 {	174'6	2'6	...	2'1	2'1	1'6	1'0	14'6	13'5	8'3	...	1'0	...	0'5	54'6	385'...	17'60	29'6	3'6	21'3
GROUP IX.— DECCAN.	10,443 {	4'4	...	0'3	0'1	107'2	1'4	...	1'1	0'4	0'8	2'0	2'5	3'2	22'5	10'9	10'2	...	1'9	...	2'0	50'2	463'5	20'78	22'0	10'4	17'7
Bombay . . .	692 {	...	1'4	1'4	...	234'1	...	...	...	...	...	7'2	11'6	73'7	31'8	88'2	...	1'4	2'9	59'2	30'0	832'4	44'45	4'3	17'3	17'3
Santa Cruz . . .	607 {	...	...	...	...	46'1	...	...	...	...	1'6	3'3	...	146'6	...	23'1	...	...	...	3'3	8'2	400'3	17'81	6'6	...	1'6
Cannanore (Malabar Area.)	714 {	13'4	...	...	4'0	192'7	...	...	...	...	6'7	...	1'3	53'8	13'4	...	...	1'3	...	4'0	20'2	391'1	17'43	12'1	2'7	5'4
Trivandrum . . .	52 {	...	...	...	...	38'5	...	...	...	...	...	...	...	76'9	19'2	...	...	...	...	...	...	384'6	10'38	...	...	...
Deolali . . .	477 {	...	...	...	...	132'1	...	...	...	...	...	4'2	...	27'3	4'2	98'5	...	...	...	29'3	10'5	817'6	34'91	4'2	6'3	...
GROUP X.— WESTERN COAST.	2,572 {	3'9	0'4	0'4	1'2	126'0	...	...	...	...	2'3	3'5	3'5	76'6	13'6	47'4	...	0'8	0'8	23'5	20'2	591'0	27'89	7'0	6'6	6'6

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.											
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic fever.	Heat stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancre.	Gonorrhœa.
Naini Tal .	54 {	18.5	18.5	55.6	129.6	1.30	55.6
Lausdowne .	1,882 {	28.7	...	...	...	226.9	0.5	0.5	...	...	2.1	7.4	8.0	45.7	3.7	19.7	...	0.5	...	0.5	8.5	522.3	18.71	3.2	1.6	3.7
Takdah .	58 {	155.2	17.2	...	...	327.6	...	...	...	...	...	17.2	...	51.7	...	51.7	...	17.2	...	...	...	793.1	26.55	...	...	...
Simla .	100 {	...	...	10.0	...	10.0	...	...	...	...	...	...	...	...	...	10.0	...	...	...	...	...	220.0	3.20	...	...	...
Jutogh .	236 {	...	...	...	...	29.7	...	...	8.5	...	...	...	...	16.9	...	...	...	4.2	...	...	16.9	199.2	8.05	12.7	...	4.2
Dharmasala .	1,087 {	0.9	...	1.8	...	108.6	0.9	...	...	0.9	0.9	1.8	8.3	10.1	1.8	...	...	...	...	...	8.3	302.7	10.65	5.5	...	2.8
Bakloh .	887 {	4.5	...	...	...	117.2	...	...	...	...	...	2.3	9.0	44.0	11.3	2.3	...	3.4	...	1.1	11.3	366.4	18.80	5.6	...	5.6
Khyragully .	120 {	...	...	...	8.3	8.3	...	...	...	...	...	...	...	8.3	...	...	...	...	...	...	...	66.7	3.08	...	...	...

Murree (Sunny Bank).	166	...	...	...	...	186.7	...	...	...	...	...	...	12.0	24.1	42.2	12.0	54.2	...	6.0	...	...	24.1	578.3	19.28	18.1	6.0	...
		...	...	...	...	...	...	...	...	...	...	...	6.02	6.02	...	...	...	...	...	...	...	...	18.07	...	...	...	...
Kalabagh and Baragally.	113	...	...	...	...	17.7	...	...	...	...	...	...	...	...	8.8	...	...	...	...	...	...	17.7	106.2	2.	8.8	8.8	...
		
Chitral.	161	...	...	...	...	37.3	43.5	...	...	...	...	...	12.4	6.2	6.2	12.4	...	6.2	...	...	...	...	279.5	14.10	...	...	...
		...	...	...	...	...	...	...	...	...	...	...	6.21	6.21	...	...	...	...	...	...	...	...	24.84	...	...	...	...
Kila Drosch.	887	...	...	...	...	46.2	18.0	...	...	...	...	...	1.1	1.1	9.0	23.7	...	4.5	...	...	...	1.1	183.8	9.57	1.1	...	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	2.25	...	...	...	...	...	...	...	2.25	...	...	...	...
Malakand.	648	...	...	...	...	131.2	21.6	...	...	...	...	...	1.5	9.3	7.7	34.0	4.6	4.6	...	3.1	...	6.2	296.3	11.02	6.2	...	...
		...	...	...	...	...	...	...	...	...	...	...	1.54	1.54	...	...	...	...	...	...	...	...	7.72	...	...	...	...
Gorakhpore.	142	...	...	...	...	53.4	...	...	...	...	...	...	7.0	35.4	28.2	7.0	...	...	...	...	...	7.0	267.6	9.08	...	7.0	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	7.04	...	...	...	...	...	...	7.04	...	...	...	...
Dargai.	257	...	...	...	...	120.6	3.9	...	3.9	...	...	...	...	...	23.3	27.2	11.7	...	...	...	...	...	361.9	17.43	...	...	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3.82	...	...	...	...
Chakdara.	195	...	...	...	...	302.6	20.5	...	...	...	...	...	5.1	82.1	46.2	5.1	5.1	...	10.3	...	...	10.3	620.5	27.18	5.1	...	5.1
		
Abbottabad.	3,281	0.3	262.4	1.2	...	0.3	1.2	5.2	13.7	60.0	2.7	14.6	...	0.3	...	3.7	12.5	515.4	18.74	5.8	2.7	4.0
		...	...	...	...	...	0.61	...	...	...	...	...	...	...	3.35	0.30	...	...	...	...	0.30	...	6.40	...	...	...	...
Cherat.	58	...	...	...	...	224.1	17.2	...	17.2	...	...	...	...	...	...	86.2	...	51.7	...	...	...	...	637.9	14.48	...	...	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17.24	...	...	...	...
Fort Lockhart.	294	...	...	...	...	142.9	...	...	...	...	...	...	3.4	3.4	10.2	3.4	10.2	...	...	...	3.4	...	261.9	6.67	...	...	...
		...	...	...	...	...	...	...	...	...	...	...	3.40	...	...	...	...	...	...	...	...	...	10.20	...	...	...	...
Hangu.	313	...	...	...	...	217.3	12.8	...	...	...	...	...	6.4	...	28.8	16.0	...	6.4	...	...	...	9.0	6.4	393.0	11.15	6.4	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	3.19	...	...	...	...	...	...	...	9.58	...	...	...	...
Subatbu.	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	166.7	333.3	20.00	166.7	...	...
		
Fort Sandeman.	1,811	...	...	...	...	105.5	16.6	...	...	...	...	...	0.6	2.8	3.3	15.5	21.5	14.4	...	0.6	0.6	1.1	231.9	8.81	1.1	...	...
		...	...	...	...	1.10	...	...	...	...	...	...	0.55	...	1.66	2.21	0.55	...	...	...	...	...	7.18	...	...	...	...
Hindubagh.	313	...	...	...	...	41.5	...	...	...	...	...	...	...	...	3.2	25.6	22.4	3.2	...	...	...	12.8	221.8	5.08	...	12.8	...
		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9.58	...	...	...	...
Murgha Lakhand and Musa Khel.	1,008	...	...	...	...	57.5	43.7	...	...	...	...	...	3.0	1.0	19.8	24.8	15.9	20.8	...	1.0	1.0	...	260.9	5.06	...	...	...
		...	...	...	...	...	...	...	...	...	...	...	0.99	...	4.96	0.99	...	...	...	...	...	...	6.94	...	...	...	...
Loralai.	1,381	...	...	...	...	65.2	15.9	...	0.7	...	...	...	1.4	3.6	20.3	32.6	21.7	14.5	...	...	...	5.8	285.3	12.90	3.6	1.4	0.7
		...	...	...	...	...	...	...	...	...	...	...	0.72	...	5.79	0.72	...	...	...	...	...	...	9.41	...	...	...	...

TABLE XIV—continued.
RATIOS OF STATIONS, GROUPS AND ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.											
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic Fever.	Heat Stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancere.	Gonorrhœa.
Harnai.	235	...	...	...	...	106'4	59'6	...	...	...	...	4'3	...	8'5	85'1	4'3	17'0	...	...	...	...	38'3	578'7	19'87	12'8	17'0	8'5
Quetta.	5,905	...	...	...	1'0	83'5	0'2	...	0'2	...	...	0'3	1'8	8'0	33'4	5'0	19'6	0'3	0'2	...	1'0	20'8	400'8	23'68	11'2	6'9	11'7
Dalbandin, Duzdap and Nushki.	489	24'5	...	...	...	56'7	...	...	4'1	...	...	6'1	...	10'2	53'2	...	18'4	...	...	4'1	38'9	...	556'2	15'42	...	...	...
Peshin.	676	6'13	...	...	...	139'1	23'7	...	...	...	...	5'9	3'0	19'2	38'5	5'9	5'9	...	3'0	...	7'4	14'8	515'8	15'65	5'9	5'9	3'0
Manzai.	1,290	...	...	...	...	306'2	3'1	...	...	0'8	...	9'3	26'4	3'1	33'5	39'5	12'4	...	1'6	...	7'8	14'0	786'0	10'5	7'8	3'1	3'1
Chaman.	1,308	...	...	...	...	85'6	12'2	...	...	...	...	0'8	6'9	9'2	31'3	...	3'1	...	...	...	2'3	9'9	364'7	17'76	1'5	0'8	7'6

Pachmarhi	300	...	...	...	...	66.7	...	...	...	...	...	6.7	...	3.3	3.3	...	...	...	...	...	10.0	200.0 3.33	8.53	10.0	...	...
Wellington	93	...	...	...	...	53.8	...	...	...	...	...	10.8	10.	...	129.0	32.3	96.8	...	...	...	...	32.3	763.4	24.09	21.5	...	10.8
GROUP XII.— HILL STATIONS.	28,939	2.8 0.10	0.0	0.1	0.3 0.10	130.9 0.93	6.9	0.0	0.4	0.1	...	4.1 0.28	4.4 0.45	10.3 2.18	44.6 0.93	7.9 0.31	12.6	0.1	0.7 0.03	0.1	3.4 0.14	18.4	438.9 8.05	26.97	6.9	4.1	7.4
Marching in India	817	...	...	...	1.2	236.2	...	17.1	1.2	...	...	...	...	18.4 1.22	8.6	2.4	15.0	...	...	...	...	13.3	571.6 1.22	4.33	6.0	11.0	2.4

INDIAN TROOPS, 1923.

TABLE XIV—continued.

RATIOS of STATIONS, GROUPS and ARMIES.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSION RATE.														2. DEATH RATE.												
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Sandfly Fever.	Pyrexia of uncertain origin.	Rheumatic fever.	Heat stroke.	Plague.	Circulatory Diseases.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Other Respiratory Diseases.	Dysentery.	Diarrhoea.	Hepatic Abscess.	Hepatic Congestion and Inflammation.	Scurvy.	Anæmia.	Veneral Diseases.	All Causes.	Constantly Sick Rate.	Syphilis.	Soft Chancere.	Gonorrhœa.	
EXTRA INDIA.																												
(a) In the Indian Command.																												
Bushire . . .	499	...	...	...	...	485'0	164'3	...	2'0	...	...	10'0	6'0	6'0	46'1	...	126'3	...	...	...	12'0	2'0	1118'2	33'25	...	8'0	...
Aden . . .	1,736	...	...	...	0'6	311'6	87'6	...	0'6	...	...	2'3	...	3'5	19'6	...	17'3	...	6'6	...	1'2	17'3	837'6	36'66	2'3	1'2	13'8
Kamaran (Red Sea)	28	...	...	...	...	71'4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71'4	1'43	...	...	...
Perim . . .	21	...	...	...	...	95'2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4'7	...	285'7	9'52	...	...	...
Waris Mobile Column . . .	2,346	...	...	...	...	240'4	...	...	...	...	...	4'7	2'6	6'1	46'0	...	2'1	...	0'4	...	2'6	4'7	460'8	5'51	1'3	0'9	2'6
Northern Command	44,802	2'5	...	0'2	0'8	206'9	20'9	0'0	0'7	0'2	0'8	1'7	2'9	11'1	31'7	8'9	13'0	0'0	0'6	0'0	2'2	14'6	465'4	16'81	5'4	3'1	6'0	

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Western Command.	18,806	{	4'6 0'16	...	0'1 ...	0'4 0'11	74'5 0'16	7'8 ...	0'1 ...	0'4 ...	0'1 0'05	...	1'3 0'32	2'2 0'05	8'8 1'75	31'4 0'48	7'3 0'16	14'4 ...	0'2 ...	0'3 ...	0'2 ...	2'5 0'05	19'5 ...	350'7 4'84	16'23	7'1	5'0	7'4
Eastern Command.	22,264	{	3'8 ...	0'1 ...	0'1 0'13	0'9 0'18	119'8 0'18	2'9 ...	0'1 0'04	0'7 ...	0'7 0'04	...	1'5 0'09	5'0 0'13	6'5 0'90	29'0 0'36	6'2 0'13	13'3 ...	0'1 ...	0'5 0'04	...	1'7 ...	32'9 ...	408'7 3'14	17'05	13'8	8'3	10'8
Southern Command.	19,642	{	3'6 ...	0'1 0'05	0'2 ...	0'4 0'10	105'9 0'10	0'8 ...	0'2 ...	0'9 ...	0'3 0'05	0'6 0'25	2'6 0'25	2'7 0'10	3'5 0'51	30'7 0'46	8'8 ...	13'6 ...	...	1'7 ...	0'3 ...	4'7 0'15	44'2 ...	477'2 3'26	21'73	19'2	9'4	15'6
Burma District.	4,814	{	...	...	...	0'2 0'21	101'0 0'21	...	0'2 ...	0'2 ...	...	...	21'6 0'83	3'3 0'62	6'0 1'45	82'1 1'25	9'8 ...	3'1 ...	...	1'7 ...	...	7'9 ...	98'3 ...	766'5 9'14	36'08	26'0	30'1	42'2
Waziristan Dist.	27,459	{	3'8 0'44	...	0'0 0'04	0'1 0'04	189'3 2'44	12'1 ...	0'3 ...	0'7 0'04	0'6 ...	...	3'8 0'26	3'6 0'26	15'4 3'79	41'9 1'93	5'5 0'29	15'0 ...	0'1 ...	0'7 ...	0'2 ...	5'3 0'22	10'7 ...	497'9 12'42	29'84	4'3	2'0	4'4
Extra India	2,284	{	...	...	...	0'4 0'44	344'6 0'44	102'5 ...	...	0'9 ...	...	...	3'9 ...	1'3 ...	3'9 0'88	25'0 ...	...	40'7 ...	...	0'4 ...	...	3'3 ...	13'6 ...	884'4 2'63	35'23	1'8	1'3	10'5
Wana Mobile Column.	2,346	{	...	...	...	...	240'4 1'28	...	...	2'1 ...	...	...	4'7 ...	2'6 ...	6'0 0'43	46'0 0'43	...	2'1 ...	...	0'4 ...	...	2'6 ...	4'7 ...	460'8 10'66	5'31	1'3	0'9	2'6
Line of March	817	{	...	...	...	1'2 ...	236'2 ...	...	17'1 ...	1'2 ...	...	...	...	...	18'4 1'22	8'6 ...	2'4 ...	15'9 ...	...	...	...	...	13'5 ...	571'6 1'22	4'33	...	11'0	2'4
Army of India	143,234	{	3'2 0'10	0'0 0'01	0'1 ...	0'5 0'05	158'1 0'69	12'1 ...	0'2 0'01	0'7 0'01	0'3 0'03	0'3 0'13	2'9 0'22	3'2 0'20	9'5 1'77	34'8 0'73	7'3 0'13	13'6 ...	0'1 ...	0'7 0'01	0'1 ...	3'3 0'08	24'0 ...	466'7 5'98	20'63	9'1	5'7	9'2

INDIAN TROOPS, 1923.

TABLE XV.

ENTERIC GROUP OF FEVERS by months, stations, groups and armies.

TABLE XVI.

MALARIA by months, stations, groups and armies.

TABLE XVII.

PYREXIA OF UNCERTAIN ORIGIN by months, stations, groups and armies.

* STATIONS AND GROUPS.	ADMISSIONS FROM ENTERIC GROUP OF FEVERS IN EACH MONTH.										ADMISSIONS FROM MALARIA IN EACH MONTH.										ADMISSIONS FROM PYREXIA OF UNCERTAIN ORIGIN IN EACH MONTH.																			
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	
Port Blair	17	1	1	...	3	...	6	...	5	1	...	17	...	1	1
Rangoon	1	1	3	2	1	1	...	1	3	...	1	6	8	1	27	
GROUP I.—BURMA COAST AND BAY ISLANDS	1	1	4	2	1	2	...	4	3	6	1	11	9	1	44	...	1	1	
Meiktila	5	2	2	5	13	6	24	22	1	...	...	...	80	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Dufferin (Mandalay)	15	18	6	6	6	6	7	11	16	37	27	51	206	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP II.—BURMA INLAND	20	20	8	11	19	12	31	33	17	37	27	51	286	...	...	...	...	...	...	...	...	...	...	...	...	...
Alipore (Calcutta)	1	1	...	2	11	8	2	19	28	20	18	26	22	23	25	12	214	...	...	...	...	...	...	...	...	...	...	...	...	...
GROUP IV.—BENGAL AND ORISSA	1	1	...	2	11	8	2	19	28	20	18	26	22	23	25	12	214	...	...	...	...	...	...	...	...	...	...	...	...	...
B		
Dinapore	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	3	...	4	5	3	6	2	...	9	11	4	...	47	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad	5	2	...	6	3	9	2	10	20	39	23	5	124	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE XV—contd.

ENTERIC GROUP OF FEVERS by months, stations, groups and armies.

TABLE XVI—contd.

MALARIA by months, stations, groups and armies.

TABLE XVII—contd.

PYREXIA OF UNCERTAIN ORIGIN by months, stations, groups and armies.

*STATIONS AND GROUPS.	ADMISSIONS FROM ENTERIC GROUP OF FEVERS IN EACH MONTH.												ADMISSIONS FROM MALARIA IN EACH MONTH.												ADMISSIONS FROM PYREXIA OF UNCERTAIN ORIGIN IN EACH MONTH.															
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	
	A																																							
Mardan					1							1	14	2	1	1	9	2	5	5	12	20	10	4	85															
Nowshera				1								1	5	1	1	1	18	13	12	11	97	111	90	59	447															
Risalpur				1								1	5	6	2	2	2	2	2	3	18	26	22	12	108															
Landi Kotal				1								2	15	5	5	5	3	9	9	57	72	45	24	6	252															
Ali Masjid												1	4	1	1	2	1	1	9	28	24	20	6	8	104															
Peshawar												1	19	11	14	13	27	43	53	44	126	177	93	87	707															
Jamrud												1	1	1	1	2	2	1	1	12	18	20	9	9	74															
Kohat												1	5	6	2	7	19	44	42	62	211	166	88	48	790															
Thal												1	1	1	1	1	7	10	30	26	24	12	14	119																
Bannu												45	25	11	13	9	22	17	36	87	130	123	47	565																
Dera Ismail Khan												4	16	8	4	10	16	11	4	39	52	25	41	230																
Tank												20	24	11	4	6	3	3	2	4	3	14	12	102																
Dardoni												16	2	3	1	9	29	26	29	25	36	16	12	204																
Idak												11	2	5	1	2	13	13	38	48	24	20	21	186																
Asad Khel												2	3	2	2	2	3	3	4	22	39	32	14	126																
Multan												2	3	3	3	12	39	110	97	20	75	48	58	469																
Kalabagh and Mari												7	2	2	11	11	2	2	8	19	29	29	17	139																
Indus												1	7	2	2	11	11	2	2	8	19	29	29	17	139															
Razmak												3	19	21	19	26	16	12	20	45	67	28	8	313																
Razani												5	7	11	11	4	9	5	4	1	1	1	1	48																
Piazza Raghza												13	32	34	27	21	16	48	50	38	33	1	1	312																
Sora Rogha												1	43	6	41	42	74	36	127	90	140	173	2	774																
Kotkai												104	31	39	33	9	44	31	15	38	104	15	1	453																
Khirgi												76	56	36	34	17	56	43	38	29	35	75	41	530																
Jandola												55	13	18	20	31	34	11	49	43	69	74	1	417																
Saidgi												6	3	7	2	16	14	6	1	1	1	1	1	54																

TABLE XV—conold.

ENTERIC GROUP OF FEVERS by months, stations, groups and armies.

TABLE XVI—conold.

MALARIA by months, stations, groups and armies.

TABLE XVII—conold.

PYREXIA OF UNCERTAIN ORIGIN by months, stations, groups and armies.

* STATIONS AND GROUPS.	ADMISSIONS FROM ENTERIC GROUP OF FEVERS IN EACH MONTH.												ADMISSIONS FROM MALARIA IN EACH MONTH.												ADMISSIONS FROM PYREXIA OF UNCERTAIN ORIGIN IN EACH MONTH.														
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Bombay	15	5	5	8	9	3	1	21	26	24	34	13	162	..	..	..	..	..	..	..	..	..	..	..	..	..
Santa Cruz	1	..	..	..	6	1	1	..	..	..	..	..	28	..	..	..	..	..	..	..	..	..	..	..	..	..
Cannanore	1	..	..	..	..	1	1	..	..	3	..	5	9	1	1	4	..	16	7	13	8	5	69	..	..	..	..	..	..	..	..	..	..	..	..	..
Trivandram	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Deolali	1	2	1	1	1	..	4	5	11	18	10	9	63	..	..	..	..	..	..	..	..	..	..	..	..	..
GROUP X.—WESTERN COAST.	..	1	..	..	..	..	1	1	..	..	..	3	15	12	15	10	17	8	7	43	44	55	52	46	324	..	..	..	..	..	..	..	..	..	..	..	..	..
A	
Bangalore	6	2	1	22	23	71	23	24	27	13	65	67	344	..	..	..	..	..	..	1	1	1	..	..	1	4	
B	1	..	..	3	1	1	6	..	..	..	..	..	..	..	..	..	..	..	..	..
Trichinopoly	3	..	..	..	2	2	1	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Thomas' Mount and Madras.	
GROUP XI.—SOUTHERN INDIA.	6	2	4	22	23	71	26	26	28	16	66	68	358	..	..	..	..	..	..	1	1	1	..	..	1	4	
Gorakhpore	2	1	1	..	..	..	..	..	..	1	2	2	9	..	..	..	..	..	..	..	..	..	..	..	..	..
Maymyo	6	15	8	4	5	9	22	13	21	12	24	17	156	..	..	..	..	..	..	..	..	..	..	..	..	..
Ghoom	1	2	..	..	..	..	1	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..
Shillong	11	10	6	18	13	17	9	10	7	7	5	15	128	..	..	..	..	..	..	..	..	..	..	..	..	..
Chakrata	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gyantse	2	1	2	1	1	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..
Almora	2	..	..	1	..	2	5	2	3	..	1	..	16	..	..	..	..	..	..	..	..	..	..	..	..	..
Naini Tal	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Lansdowne	17	18	11	31	32	30	77	68	49	57	23	14	427	..	..	..	..	1	..	..	..	..	..	..	..	1	
Takdah	6	2	7	1	2	1	..	19	..	..	..	..	..	..	..	..	..	..	..	..	..
Simla	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Intogh	4	2	1	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..
Dharmasala	3	4	2	3	7	5	13	21	16	15	10	19	118	..	..	..	..	..	..	..	..	..	..	..	..	..
Bakloh	4	2	4	1	16	9	8	3	23	19	10	5	104	..	..	..	..	..	..	..	..	..	..	..	..	..
Khyragully	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Murree	3	6	2	3	6	8	3	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
Kalabagh & Barkaly	1	..	..	1	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE XVIII.

CHOLERA by months, stations, groups and armies.

TABLE XIX.

DYSENTERY by months, stations, groups and armies.

TABLE XX.

DIARRHŒA by months, stations, groups and armies.

*STATIONS AND GROUPS.	ADMISSIONS FROM CHOLERA IN EACH MONTH.											ADMISSIONS FROM DYSENTERY IN EACH MONTH.												ADMISSIONS FROM DIARRHŒA IN EACH MONTH.																							
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.								
Port Blair Rangoon	4	..	4	1	2	1	..	1	1	..	1	..	5	1	2	4			
GROUP I.—BURMA COAST AND BAY ISLANDS	4	..	4	1	2	1	..	1	1	..	1	..	15	1	3	4		
Meiktila Fort Dufferin (Man- dalay)	1	1	1	3	..	1	3	1	5			
GROUP II.—BURMA INLAND	1	5	1	1	3	2	2	1	4	9	29	1	1	1	7
Alipore (Calcutta)	1	1	1	..	3	2	2	1	1	8	18	2	2	4	5	..	1	2	1	17		
GROUP IV.—BENGAL AND ORISSA	1	1	1	..	3	2	1	1	1	8	18	2	2	4	5	..	1	2	1	17		

INDIAN TROOPS, 1923.

III.—FOLLOWERS, 1923.

TABLE XXI.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
Port Blair (S)	30	...	...	...	...	..	..	1	..	..	..	7	40	..	..	..
Rangoon (S)	317	...	...	...	...	2	..	1	..	2	12	80	4'38	3	2	7
GROUP I.—BURMA COAST AND BAY ISLANDS.	347	...	...	...	...	2	..	2	..	2	12	87	4'78	3	2	7
Meiktila (S)	51	...	...	...	...	1	..	1	..	..	2	11	63	..	..	2
Fort Dufferin (Mandalay) (S)	178	..	..	..	..	11	..	..	..	4	9	58	15'12	3	1	5
Bhamo (S)	..	...	...	...	...	..	..	..	..	..	..	..	..	..	..	..
GROUP II.—BURMA INLAND	229	...	...	...	...	12	..	1	..	4	11	69	15'75	3	1	7

Dum Dum	1174	...	...	...	49	...	...	...	1	...	1	122	5'64	1	...	...
Alipore (N) Calcutta	900	...	...	...	50	...	...	3	7	5	18	206	9'01	8	5	5
		...	...	...	...	...	...	...	...	...	...	3		...	...	...
GROUP IV.—BENGAL AND ORISSA	2,074	...	...	...	99	...	...	3	8	5	19	328	14'65	9	5	5
		...	...	...	...	...	...	...	...	...	...	7		...	...	...
B																
Dinapore (N)	90	...	...	...	...	...	...	...	1	...	4	13	'84	1	3	...
Benares (N)	82	...	...	...	5	...	...	...	...	...	...	15	'69	...	...	...
Allahabad (N)	458	...	...	1	14	...	...	...	4	2	12	73	3'43	3	3	6
Fyzabad (N)	279	...	...	...	3	...	1	...	...	2	4	32	1'77	3	...	1
Lucknow (N)	929	...	...	1	37	...	...	6	5	6	16	192	8'45	8	3	5
Cawnpore (N)	226	...	...	...	23	...	...	1	...	2	13	114	4'37	8	2	3
Fatehgarh (N)	69	...	...	...	...	...	...	...	1	...	1	10	'58	...	...	1
Sitapur	369	...	...	...	2	...	...	1	1	...	3	23	'76	...	...	2
		...	...	...	...	...	...	1	...	...	...	1		...	...	...

TABLE XXI—*contd.*

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
GROUP V.—GANGETIC PLAIN AND CHUTIA NAGPUR.	2,502	...	...	2	...	84	...	1	8	12	12	53	472	20'89	24	11	18
		...	...	...	...	...	...	...	1	...	...	...	4		...	...	...
A																	
Bareilly (N)	399	...	...	...	1	27	...	...	...	1	...	12	92	3'26	6	2	4
		...	...	...	...	...	...	...	...	...	...	3	...		...	...	...
Roorkee (N)	577	...	...	...	...	21	...	...	...	2	...	6	63	2'68	4	2	...
	
Dehra Dun (N)	314	...	...	...	1	90	...	...	1	...	...	25	180	9'29	18	3	4
	
Meerut (N)	1,064	...	...	...	1	16	...	...	1	3	...	19	139	6'58	5	10	4
		...	...	...	1	...	...	...	...	...	...	8	...		...	...	...
Delhi (N)	415	...	...	...	...	20	...	...	1	3	1	18	106	5'75	6	4	8
		...	...	...	...	...	...	...	1	...	...	2	...		...	...	...

Ambala (N)	417	1	...	1	...	210	...	...	1	1	...	7	266	3'99	1	4	2
B		...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Jullundur (N)	401	...	...	...	...	27	...	...	...	3	...	...	56	1'78	...	...	...
		...	...	...	...	...	...	...	...	2	...	...	2	...	...	...	...
Ferozepore (N)	1,927	...	...	...	1	131	...	...	...	5	3	5	234	7'32	1	3	1
B		...	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...
Lahore Cantonment (N)	743	8	...	...	2	237	...	...	5	18	15	19	438	18'83	4	5	10
		...	...	...	...	...	...	...	...	4	...	...	5	...	...	...	...
Amritsar (N)	204	...	...	...	...	29	1	...	...	1	1	8	67	2'25	2	4	2
	
Sialkot (N)	469	...	...	...	1	19	...	...	...	3	...	4	70	4'26	...	2	2
	
Jhelum (N)	341	...	...	...	1	32	...	...	1	2	3	...	106	3'16	...	...	...
		...	...	...	1	...	...	...	...	1	...	...	2	...	...	...	...
Rawalpindi (N)	1,601	...	...	1	1	242	...	...	5	27	9	34	688	31'22	11	9	14
		...	...	...	...	3	...	...	1	5	...	1	16	...	1	...	...
Attock (N)	19	...	...	...	...	2	...	...	...	...	...	...	3	'03	...	...	...
	
Campbellpore (N)	244	...	...	...	...	2	...	...	1	2	...	1	11	'39	1	...	...
	
Mona	1,394	...	...	...	...	33	6	...	...	8	...	...	121	4'50	...	...	...
		...	...	...	...	2	3	...	...	...	...	...	7	...	...	...	...
Sargodha	1,946	...	...	...	...	63	...	...	5	22	...	...	261	9'24	...	...	...
		...	...	...	...	5	...	...	1	5	...	...	16	...	...	...	...
GROUP VI.—UPPER SUB-HIMALAYA	12,475	9	...	2	9	1,201	7	...	21	101	32	158	2,901	114'73	59	*48	51
		...	...	...	2	10	3	...	2	19	...	1	65	...	1	...	...

FOLLOWERS, 1923.

TABLE XXI—contd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.										2. DEATHS.					
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhœa.
A																	
Mardan (N)	325	...	...	...	...	16	...	9	...	7	1	2	88	3'12	1	...	1
		...	...	...	...	...	...	3	...	2	...	...	9	...	...	...	...
Nowshera (N)	586	...	...	...	...	30	1	...	...	3	...	...	107	4'39	...	...	...
	
Peshawar (N)	1,065	...	...	...	3	29	...	...	3	20	3	20	287	12'96	8	6	6
		...	...	...	1	...	...	...	...	4	...	...	7	...	...	...	...
Fort Jamrud (N)	514	...	...	...	...	35	...	...	1	5	2	13	160	6'45	5	6	2
		...	...	...	...	...	...	...	...	1	...	...	2	...	...	...	...
Kohat (N)	727	...	...	...	...	102	...	...	2	18	2	7	210	7'77	1	2	4
		...	...	...	...	...	...	...	1	6	...	...	10	...	...	...	...
Thal (N)	33	...	...	...	...	14	...	...	...	...	...	...	15	4'1	...	...	...
	
Bannu (N)	808	...	...	...	1	163	...	...	2	42	2	13	487	16'23	6	...	7
		...	...	...	...	2	...	...	1	13	1	1	22	...	...	...	1
Dera Ismail Khan (N)	786	...	...	...	...	119	...	...	2	33	12	51	503	44'71	19	12	20
		...	...	...	...	...	...	...	...	5	...	...	5	...	...	...	...

Tank (N)	509	...	...	...	...	33	...	...	...	13	...	8	136	7'16	4	1	1
		...	...	...	...	1	...	...	...	...	...	...	2		...	...	...
Risalpur	1,145	...	...	...	...	31	...	8	2	9	1	9	168	6'45	3	3	3
		...	...	...	...	...	...	2	...	...	...	...	3		...	...	...
Landikotal	453	20	...	...	1	52	...	...	2	28	1	7	284	9'84	1	2	4
		...	...	...	...	...	...	...	...	6	...	...	8		...	...	...
Ali Masjid	233	...	...	...	...	20	...	...	...	10	6	6	75	2'65	2	2	2
		...	...	...	...	...	...	...	...	1	...	...	1		...	...	...
Multan (N)	518	...	...	...	...	12	...	...	1	7	...	4	49	1'89	...	2	2
		...	...	...	...	...	...	...	...	3	...	...	5		...	...	...
Dardoni	291	...	...	...	...	29	...	...	...	7	1	3	75	9'87	1	...	2
		...	...	...	...	...	...	...	...	3	...	...	5		...	...	...
Idak	288	...	...	...	...	38	...	...	...	14	1	5	129	3'02	...	1	4
		...	...	...	...	...	...	...	...	4	...	...	4		...	...	...
Saidgi	51	...	...	...	...	7	...	...	...	...	...	...	20	'58	...	...	...
	
Razmak	753	20	...	...	...	43	...	...	3	11	1	18	209	4'67	...	2	15
		2	...	...	...	...	...	...	...	3	...	...	10		...	...	...
Razani	555	...	...	...	...	11	...	...	2	...	...	10	98	1'35	1	2	7
		...	...	...	...	...	...	...	1	...	...	...	2		...	...	...
Piazza Raghza	406	...	...	...	...	69	...	...	...	7	1	9	228	4'65	5	...	4
		...	...	...	...	...	...	...	...	...	...	...	4		...	...	...
Sara Rogha	705	...	...	...	...	118	...	...	3	21	1	6	265	8'13	2	3	1
		...	...	...	...	3	...	...	...	6	...	...	9		...	...	...
Kotkai	358	...	...	...	...	57	...	...	...	1	...	4	130	3'22	1	3	...
		...	...	...	...	1	...	...	...	...	...	...	4		...	...	...

FOLLOWERS, 1923.

TABLE XXI—contd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
Khirgi	1,190	..	..	..	..	337	4	..	2	26	2	14	670	10'25	8	1	5
Kalabagh and Mari-Indus	696	..	..	1	..	41	..	..	2	1	..	33	152	8'98	16	6	11
		1	1	1	
Asad Khel	171	..	..	..	..	72	..	..	..	..	1	5	139	2'15	..	1	4
	
Jandola (N) (C)	575	..	..	..	..	58	..	..	4	23	1	5	186	5'84	1	..	4
		1	3	
Hyderabad (Sind) (S)	285	1	..	1	..	1	..	..	2	1	..	6	24	1'20	2	1	3
		1	2	
Karachi (S)	272	..	..	..	..	15	..	..	1	1	..	22	122	6'50	8	4	10
		1	2	
GROUP VII.—N.-W. FRONTIER, INDUS VALLEY, AND NORTH- WESTERN RAJPUTANA.	14,302	41	..	2	5	1,552	5	17	35	308	39	280	5,006	214'44	95	60	125
		2	1	10	..	5	5	64	1	1	132		1	..	1	1

A.																					
Rajkot (S)	52	{	...	...	...	...	...	...	...	...	...	...	7	}	'19	{	...	...	...
				...	...	...	...	...	...	...	...	...	...	5	}					
Deesa (S)	59	{	...	...	...	...	1	...	...	...	...	...	9	}	'20	{	...	...	...
				}						
Ahmedabad (S)	76	{	5	2	...	2	24	}	'74	{	1	...	I
				}						
Baroda (S)	54	{	...	...	...	...	2	...	...	...	...	...	5	}	'19	{	...	...	...
				}						
B.																					
Neemuch (S)	103	{	...	...	...	...	...	...	...	I	...	2	9	}	'28	{	2	...	...
				}						
Nasirabad (S)	183	{	2	3	I	I	2	2	28	}	'19	{	2
				2	}						
Ajmer (S)	59	{	I	I	11	}	'40	{	...	I	...
				}						
Muttra	305	{	...	...	...	...	...	...	...	...	...	...	8	}	'32	{	...	...	...
				}						
Agra (N)	339	{	17	2	I	...	9	47	}	'37	{	2	3	4
				I	I	}					
Jhansi (S)	607	{	23	I	7	I	4	85	}	'67	{	3	...	I
				}					
Nowgong (S)	65	{	I	7	}	'25	{	I
				}					

TABLE XXI—contd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
Mhow (S)	562	..	..	..	..	9	..	..	1	3	1	4	43	2'48	2	..	2
		..	..	..	..	..	..	..	..	1	..	..	2		..	..	..
GROUP VIII.—SOUTH-EASTERN RAJ-PUTANA, CENTRAL INDIA, AND GUJARAT	2,464	2	..	..	..	61	..	..	5	15	4	25	283	11'28	12	4	9
		..	..	..	..	..	..	..	1	1	..	..	5		..	..	..
A																	
Saugor (S)	59	..	..	..	..	3	..	..	..	..	..	3	24	41	3	..	..
	
Jubbulpore (S)	608	1	..	..	..	33	..	1	2	4	4	7	113	3'98	2	1	4
		..	..	..	..	..	..	1	..	..	1	..	3		..	..	..
Kamptee (S)	106	..	..	..	..	11	..	..	..	2	..	..	29	1'08	..	..	..
	
B																	
Aurangabad (S)	83	..	..	..	..	22	..	..	..	..	..	3	49	2'74	1	..	2
	
Ahmednagar (S)	138	..	..	..	..	3	..	..	..	2	..	5	23	1'15	2	2	1
	

Secunderabad (S)	1,284	...	...	...	35	...	...	1	2	3	21	206	8'17	11	2	8
		...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
Belgaum (S)	250	...	...	...	2	...	...	1	...	...	5	18	1'45	...	3	2
	
Satara (S)	23	...	...	...	...	...	...	...	...	...	1	4	'33	1	...	...
	
Poona (S)	693	...	...	...	31	...	5	...	5	13	49	331	15'75	15	12	22
		...	...	...	...	...	...	...	2	1	...	5	...	...	...	...
Kirkee (S)	567	...	...	1	76	...	...	1	4	2	47	207	9'45	22	1	24
		...	...	...	...	...	...	...	1	...	...	1	...	...	...	...
GROUP IX.—DECCAN	3,811	1	...	1	216	...	6	5	19	22	141	1,004	44'71	57	21	63
		...	...	...	...	...	1	...	3	2	...	11	...	...	...	...
Bombay (S)	330	...	...	1	52	...	...	...	5	3	25	162	8'78	7	8	10
		...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Santa Cruz (S)	58	...	...	2	...	...	...	...	...	...	...	16	'90	...	...	...
	
Cannanore (S)	96	...	...	...	6	...	...	...	...	...	5	26	1'44	2	2	1
	
Deolali	285	...	...	...	10	...	...	...	4	...	9	80	5'04	4	2	3
		...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
GROUP X—WESTERN COAST	769	...	...	3	68	...	...	...	9	3	39	284	16'16	13	12	14
		...	...	...	...	...	...	...	...	...	...	2	...	...	...	...

TABLE XXI—contd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fever.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhoea.
A	1,428	...	..	2	..	65	..	1	1	3	4	17	264	11'48	4	2	11
Bangalore (S)	1	..	1	1	6				
B	51	...	..	..	..	1	..	..	..	..	..	1	13	'45	..	..	1
Trichinopoly (S)	2				
St. Thomas' Mount and Madras .	311	...	..	..	..	..	..	..	1	..	..	11	61	3'85	5	..	6
		1	1				
GROUP XI—SOUTHERN INDIA	1,790	...	..	2	..	66	..	1	2	3	4	29	338	15'78	9	2	18
		1	..	1	1	1	9				
Maymyo (S)	209	...	..	..	..	2	..	..	2	1	..	6	58	2'82	..	3	3
		2	2				
Ghoom	28	...	..	..	..	..	..	..	..	2	1	..	8	'75	..	..	..
		1				
Shillong (N)	55	...	..	..	..	7	1	..	..	3	..	4	26	1'35	3	..	1
		1	1				

Chakrata	96	...	...	...	...	3	...	...	...	...	...	...	10	'22	...	...	...
Gyantse (N)	19	...	...	...	...	1	...	...	...	...	...	...	1	'05	...	...	...
Almora (N)	25	...	...	...	...	...	...	...	1	...	...	...	3	'20	...	...	...
Naini Tal (N)	54	...	...	...	...	...	...	...	...	...	...	1	2	'01	1	...	...
Lansdowne (N)	240	5	...	...	...	34	...	...	1	1	2	...	78	2'47	...	...	...
Takdah (N)	6	...	...	...	...	2	...	...	...	1	...	...	4	'14	...	...	...
Gorakhpore	9	...	...	...	...	1	...	...	...	...	...	...	1	'42	...	...	...
Jutogh (N)	60	...	...	...	...	...	...	...	1	...	...	1	3	'19	...	...	1
Simla	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Solon	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathu	13	...	...	...	...	1	...	...	...	...	...	1	4	0'18	1	...	...
Dharmsala (N)	80	...	...	...	...	5	...	...	1	...	...	...	14	'37	...	...	...
Bakloh (N)	111	...	...	...	...	5	...	...	...	...	...	...	12	'35	...	...	...

TABLE XXI—contd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Enteric Group of Fever.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral cases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancere.	Gonorrhoea.
Khyragully (N)	34	..	..	..	1	..	..	..	..	..	..	4	0'23	..	..	..
Murree (Sunny Bank)	111	..	..	..	..	7	..	..	..	1	..	24	'81	1	..	..
Kalabagh and Baragaly	25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chitral (N)	17	..	..	..	..	1	..	..	..	..	..	7	'14	..	..	..
Killa Drosh (N)	99	..	..	..	..	3	..	..	..	..	1	11	'46	1	..	..
Malakand (N)	62	..	..	..	..	4	..	..	..	2	..	10	'46	..	..	..
Dargai (N)	57	..	..	..	..	3	..	..	..	1	1	8	'25	..	..	..
Chakdara (N)	23	..	..	..	..	6	..	..	..	1	..	13	'51	..	..	..
Abbottabad (N)	281	..	..	..	..	47	..	..	5	10	..	106	4'47	1	2	1
		..	..	..	..	1	..	..	..	..	1	3		1	..	..

Cherat (N)	43	1	5	16
Fort Lockhart (N)	48	2	1	...	1	7	28	1
Hangu (N)	45	5	4	11	37
Fort Sandeman (S)	219	...	...	...	10	...	...	...	...	3	1	33	1'69	...	...	1
Hindubagh (S)	31	...	...	...	1	...	...	...	...	...	1	9	34	...	...	1
Murgha, Musa Khel and Lakaband	280	...	...	...	6	...	...	...	...	7	...	41	1'23	...	...	...
Loralai (S)	329	...	...	...	5	...	...	1	2	2	1	56	2'90	1	...	...
Quetta (S)	1,445	...	...	...	88	...	...	3	14	5	29	413	24'21	11	6	12
Harnai	43	...	...	...	2	...	...	...	1	1	...	19	56	...	...	...
Peshin (S)	89	...	...	...	16	...	...	...	...	...	1	37	1'46	1	...	...
Manzai (S)	379	...	...	...	61	...	...	6	13	7	11	207	55'80	4	3	4
Ctaman (S)	119	...	...	...	6	...	...	1	1	...	2	28	1'44	...	...	2
Dalbandia Duzdap Nushki	58	...	...	...	1	...	...	...	...	...	1	12	24	1	...	...

FOLLOWERS, 1923.

TABLE XXI—concl'd.

ACTUALS of STATIONS, GROUPS and COMMANDS.

STATIONS AND GROUPS.	Average annual strength.	1. ADMISSIONS.											2. DEATHS.				
		Influenza.	Cholera.	Small-pox.	Euteric Group of Fevers.	Malaria.	Pyrexia of uncertain origin.	Plague.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Dysentery.	Veneral Diseases.	All Causes.	Constantly Sick.	Syphilis.	Soft Chancre.	Gonorrhœa.
Pachmarhi	6	..	..	..	..	8	..	..	..	1	..	1	20	46	1	..	..
Wellington	439	..	..	..	..	1	..	..	..	..	..	1	49	183	..	1	..
GROUP XII.—HILL STATIONS	5,329	5	..	..	1	345	1	..	21	69	22	69	1,354	109'82	27	15	27
Mobile Column Wana	276	..	..	..	..	58	..	..	5	12	..	1	40	1'12	1	..	..
EXTRA INDIA.																	
(a) In the Indian Command—																	
Aden (S)	1,476	..	..	..	1	84	..	..	1	12	..	5	296	13'76	3	..	2
Kameron (S)	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perim (S)	5	..	..	..	..	..	..	..	..	..	..	..	1	'02	..	..	..
SUMMARY.																	
NORTHERN COMMAND	16,456	29	..	2	11	1,557	8	17	27	220	48	155	4,003	152'33	45	52	58
		..	..	..	2	11	3	5	4	41	..	2	101		2	..	..

WESTERN COMMAND	3,653	{	3	...	1	...	164	...	...	9	30	13	69	878	}	44'68	{	27	12	30
			...	...	...	...	1	...	...	1	6	...	...	25			{	...	...	...
EASTERN COMMAND	8,521	{	5	...	2	3	422	1	1	17	38	21	166	1,568	}	71'40	{	78	40	48
			...	...	1	1	1	...	...	2	2	...	...	29			{	...	...	...
SOUTHERN COMMAND	8,152	{	1	...	6	...	391	...	7	9	43	31	222	1,839	}	84'62	{	87	36	99
			...	...	...	...	1	...	2	1	4	2	1	25			{	1	...	...
BURMA DISTRICT	785	{	...	...	...	...	16	...	1	5	1	6	29	214	}	23'35	{	6	6	17
			...	...	...	...	...	...	1	3	...	...	...	5			{	...	...	...
WAZIRISTAN DISTRICT	8,525	{	20	...	1	1	1,156	4	...	26	212	30	195	3,624	}	206'61	{	68	35	92
			2	...	...	...	12	...	...	5	46	1	1	95			{	...	...	1
WANA MOBILE COLUMN	276	{	...	...	...	...	58	...	...	...	8	1	4	121	}	1'12	{	3	1	...
					{
EXTRA INDIA	1,492	{	...	...	...	1	84	...	...	1	12	...	5	297	}	13'78	{	3	...	2
			...	...	...	...	...	...	...	...	1	...	...	1			{	...	...	...
INDIA	47,360	{	58	...	12	16	3,848	13	26	104	564	150	845	12,544	}	597'89	{	317	182	346
			2	...	...	3	26	3	8	16	100	3	4	281			{	3	...	1

FOLLOWERS, 1923.

IV.—PRISONERS, 1923.

TABLE XXII.

RATIOS of ADMINISTRATIONS.

	RATIOS PER 1,000 OF THE AVERAGE STRENGTH.												
	Burma.	Assam.	Bengal.	Bihar and Orissa.	United Provinces.	Punjab.	N.-W.F. Province.	Central Provinces.	Bombay.	Madras.	India.*	Andamans.	India.†
I.—AVERAGE ANNUAL STRENGTH	16,251	2,233	12,522	5,175	27,948	17,893	3,299	4,089	10,209	19,222	119,456	9,593	129,049
II.—CONSTANTLY SICK RATE OF THE YEAR	24'06	35'4	44'2	43'1	22'1	30'1	34'9	13'2	25'5	17'5	26'6	36'6	27'4
INCLUDING SUBSIDIARY JAILS AND LOCK-UPS	...	33'4	42'01	39'5	...	23'5	34'5	13'4	23'2	17'2	25'8	...	24'05
III.—ADMISSION RATE OF THE YEAR—													
Influenza	6'8	'4	37'8	46'4	10'05	4'4	8'5	30'8	3'2	4'6	12'2	13'6	12'3
Cholera	'06	...	'5	'2	'04	...	...	'2	...	...	'1	...	'1
Small-pox	'06	'4	...	5'2	'5	'4	...	...	'3	'2	'5	...	'4
Enteric Fever	2'3	...	1'4	3'5	'3	2'01	'6	...	'2	2'2	1'4	6'3	1'3
Malaria	46'6	250'8	298'5	203'7	190'1	404'1	514'4	64'6	238'8	30'9	198'6	330'7	208'4
Sandfly Fever . . . . .	...	6'7	...	...	...	'8	58'2	'2	...	33'8	7'3	'6	5'2
Pyrexia of uncertain origin	60'07	8'06	39'9	30'3	1'61	36'2	40'9	8'8	'2	'4	20'2	...	18'7
Tubercle of the Lungs	10'5	9'4	10'6	8'9	9'02	4'1	9'4	8'1	4'8	9'7	8'3	3'5	8'0
Pneumonia	47	17'9	10'1	13'7	18'5	16'4	24'6	9'3	14'8	9'6	13'3	7'9	12'9
Respiratory Diseases	8'5	46'1	37'3	39'6	28'4	48'2	46'7	31'3	45'5	23'9	31'7	26'6	31'3
Dysentery	34'9	62'2	96'2	221'06	23'7	10'7	30'3	69'5	31'7	50'0	46'7	71'4	48'6
Diarrhœa	5'0	61'8	96'7	126'2	16'6	19'6	10'6	23'0	43'9	1'09	29'3	25'7	29'0
Spleen Diseases	'12	'4	'3	2'1	'9	'06	...	'5	'4	'05	'4	2'8	'6

Scurvy . . . . .	...	...	1'2	...	'04	...	'3	...	'8	...	'2	1'8	'3
Anæmia and Debility	4'1	5'4	18'8	2'3	4'8	9'6	3'3	4'2	2'9	2'5	6'2	7'2	6'2
Abscess, Ulcer and Boil	35'9	54'6	58'06	54'1	78'5	62'4	60'3	26'9	60'6	9'3	51'5	36'8	50'4
ALL CAUSES	1,030'4	804'7	1,121'7	1,041'2	550'8	876'7	1,030'9	377'4	725'8	322'6	735'8	804'1	740'8
INCLUDING SUBSIDIARY JAILS AND LOCK-UPS . . . . .	...	713'6	1,022'6	904'8	...	823'2	993'6	345'3	610'6	278'9	684'8	...	692'4
IV.—DEATH RATE OF THE YEAR—													
Cholera	'06	...	'24	'19	'04	...	...	...	...	...	'05	...	'05
Small-pox	'06	...	...	...	...	...	...	...	...	...	'01	...	'008
Enteric Fever	'68	...	'36	'58	'04	'50	'30	...	'09	'16	'30	...	'28
Malaria	'37	1'79	1'60	'58	'83	1'18	2'42	'24	'78	'36	'85	3'02	1'01
Sandfly Fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyrexia of uncertain origin . . . . .	...	...	'09	...	...	'11	...	...	...	...	'03	...	'02
Tubercle of the Lungs	3'5	5'37	3'19	2'71	2'29	2'01	2'42	3'91	1'96	3'07	2'78	1'46	2'68
Pneumonia	1'17	5'37	1'84	2'90	3'43	4'01	6'36	3'18	2'94	2'34	2'92	3'44	3'96
Respiratory Diseases	'12	...	'24	'77	'64	1'01	2'12	1'47	'49	'31	'59	'63	'59
Dysentery	1'17	2'24	2'48	5'20	1'47	'39	'30	2'90	'29	2'81	1'6	7'5	2'08
Diarrhœa	'06	1'34	'32	'77	'43	'45	'60	'49	1'18	...	'40	...	'37
Hepatic Abscess	'06	'45	...	...	...	...	...	...	...	...	'02	'10	'02
Anæmia and Debility . . . . .	...	'45	'09	'19	'11	'50	'30	'24	'19	'05	'17	'52	'19
Phagedæna, Slough and Gangrene . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
ALL CAUSES	12'55	25'08	15'89	20'5	13'24	14'70	20'31	19'81	11'26	16'59	14'95	28'77	16'0
INCLUDING SUBSIDIARY JAILS AND LOCK-UPS . . . . .	...	22'24	14'49	17'80	...	13'78	19'57	18'12	9'48	14'34	13'91	...	15'0

* Including Ajmer, Sibi, Quetta, Secunderabad, Mercara and excluding Andamans.
 † Including Ajmer, Sibi, Quetta, Secunderabad, Mercara and Andamans.

SUMMARY OF ADMISSIONS FROM ENTERIC FEVER, MALARIA, PYREXIA OF UNCERTAIN ORIGIN, CHOLERA, DYSENTERY and DIARRHŒA.

ENTERIC FEVER by months, and Administrations.

MALARIA by months, and Administrations.

PYREXIA OF UNCERTAIN ORIGIN by months, and Administrations.

JAILS AND ADMINISTRATIONS.	ADMISSIONS FROM ENTERIC FEVER IN EACH MONTH											ADMISSIONS FROM MALARIA IN EACH MONTH.											ADMISSIONS FROM PYREXIA OF UNCERTAIN ORIGIN IN EACH MONTH.																	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	
BURMA	3	4	3	2	1	3	5	2	3	3	8	1	38	61	43	46	45	53	60	106	66	72	76	66	63	757	45	34	57	65	81	96	155	94	122	96	89	43	977	
ASSAM	32	24	31	27	68	81	110	73	40	39	26	9	560	3	2	3	...	1	4	...	1	4	18
BENGAL PRESIDENCY	1	...	1	2	...	3	...	2	2	5	1	...	17	253	178	218	284	287	247	345	286	342	442	471	385	3,738	22	18	25	19	28	26	33	35	33	66	37	33	375	
BIHAR AND ORISSA	2	...	...	5	3	2	2	1	3	...	...	...	18	54	77	66	71	68	96	128	101	124	103	98	68	1,054	...	...	3	3	5	10	11	26	21	59	13	3	154
UNITED PROVINCES OF AGRA AND OUDH.	...	1	...	2	1	1	...	2	...	...	...	...	7	173	151	249	260	279	267	330	566	1,148	564	309	5,319	1	...	2	1	1	26	7	...	1	2	3	1	45	
PUNJAB	2	1	1	4	6	4	3	7	6	...	1	1	36	311	174	150	163	349	300	297	698	1,544	1,029	1,148	547	7,230	109	55	39	33	47	47	44	38	44	72	70	49	647	
N.-W. F. PROVINCE . . . . .	...	...	...	...	...	1	1	...	...	...	...	...	2	115	64	57	57	83	75	75	144	294	331	301	101	1,697	4	...	8	4	12	3	23	24	17	14	14	12	135
CENTRAL PROVINCES . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	12	9	10	12	10	14	23	49	40	48	22	15	264	2	1	1	2	1	...	7	8	6	4	4	...	36
BOMBAY PRESIDENCY . . . . .	...	...	...	...	...	...	...	...	2	...	...	...	2	174	155	156	183	173	154	198	158	240	247	289	301	2,438	...	...	...	1	1	...	...	...	...	...	...	...	2
MADRAS PRESIDENCY	3	3	4	3	2	1	9	8	5	2	2	1	43	55	66	83	46	53	37	40	34	36	58	53	32	593	6	...	...	...	1	...	...	...	...	...	...	...	7
ANDAMANS . . . . .	...	...	...	...	...	...	...	1	...	...	...	5	6	126	178	264	266	403	540	330	241	234	235	186	160	3,172	...	...	...	...	...	...	...	...	...	...	...	...	...
INDIA *	11	9	9	18	13	14	20	23	20	12	12	8	169	1,375	1,122	1,331	1,420	1,830	1,884	1,986	2,419	4,013	4,203	3,309	2,006	26,900	194	110	140	128	178	212	280	226	248	316	230	142	2,404	

* Including Delhi, Sibi, Quetta, Ajmer, Secunderabad, Mercara and Andamans.

**SUMMARY OF ADMISSIONS FROM ENTERIC FEVER, MALARIA, PYREXIA of UNCERTAIN ORIGIN,
CHOLERA. DYSENTERY, and DIARRHŒA—concl'd.**

*CHOLERA by months
and Administrations.*

*DYSENTERY by months
and Administrations.*

*DIARRHŒA by months
and Administrations.*

JAILS AND ADMINISTRATIONS.	ADMISSIONS FROM CHOLERA IN EACH MONTH.												ADMISSIONS FROM DYSENTERY IN EACH MONTH.												ADMISSIONS FROM DIARRHŒA IN EACH MONTH.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
BURMA					1							1	50	37	27	26	44	88	52	50	60	46	46	41	567	4		14	10	15	14	4	6	4	6	1	3	81
ASSAM													12	12	11	10	8	18	8	11	24	12	6	7	139	4	6	11	13	11	10	17	14	16	14	9	13	138
BENGAL				2			2	1			1	6	79	77	97	121	110	113	115	103	101	104	103	81	1,204	52	68	136	128	115	98	151	130	80	88	90	75	1,211
BIHAR AND ORISSA					1							1	23	23	64	53	30	66	143	226	203	150	91	71	1,143	23	25	48	51	41	55	101	102	55	59	37	47	652
UNITED PROVINCES OF AGRA AND OUDH.								1				1	52	20	41	66	52	31	45	111	88	65	50	41	662	18	22	46	66	28	37	42	68	39	54	19	25	464
PUNJAB													21	17	13	17	15	9	9	14	13	37	12	13	190	43	20	26	25	22	36	48	32	17	33	28	20	350
N.-W. F. PROVINCE													2	5	2	13	10	5	6	4	16	19	8	10	100	2		2	6	4	2	5	2	3	2	5	2	35
CENTRAL PROVINCES								1				1	10	9	6	8	13	15	47	88	43	19	21	5	284		1	2	5	1	2	51	25	3	2	1	1	94
BOMBAY													28	28	21	17	14	19	39	46	26	30	31	25	324	38	25	40	52	51	46	45	52	40	25	17	15	446
MADRAS													77	75	87	55	76	168	81	51	47	69	82	93	961	1	4	2	4	3	4		1	1		1		21
ANDAMANS													29	25	32	26	73	121	92	72	87	60	44	24	685	20	15	17	16	29	24	39	14	3	20	30	20	247
INDIA †				2	2		2	3			1	10	384	330	401	413	445	653	638	777	709	611	494	411	6,266	208	186	344	376	320	329	511	446	261	303	239	222	3,745

† Including Delhi, Sibi, Quetta, Ajmer, Secunderabad, Mercara and Andamans.

PRISONERS, 1923.

TABLE XXIII.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.						Constantly sick.	JAIL POPULATION OF INDIA 129,649.		
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS 2,788.			MEN 63,139.			WOMEN 5,762		CHILDREN 7,845.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS 2,248.			MEN PERCENT 143,334				Admissions.	Deaths.	
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.*	Admissions.	Deaths.	Invalids.	Constantly sick.				Admissions.	Deaths.
DISEASES CAUSED BY INFECTION.																				
Anthrax . . . . .	..	..	..	2	'18	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Blackwater fever . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	4	..	..	6	'52	..	..	..	..	36	..	1	..	..	111	..	..	7'70	313	—
Cholera . . . . .	..	..	..	..	..	..	..	..	..	..	..	1	..	..	3	1	..	0'18	10	6
Cow-pox . . . . .	..	..	..	1	'03	..	..	..	..	1	..	..	..	..	1	..	..	0'02	6	—
Dengue	71	..	..	994	21'26	..	..	89	..	71	..	27	..	..	529	..	..	11'45	1,116	—
Diphtheria	6	1	..	69	5'85	3	..	4	..	40	5	1	..	..	..	..	..	..	1	—
Dysentery . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,839	253
(a) Protozoal	45	..	3	751	54'61	7	8	23	1	38	4	24	1	..	678	13	22	42'72	291	11
(b) Bacillary . . . . .	..	..	..	23	1'63	1	..	2	..	2	..	..	..	..	15	3	..	1'18	136	5
(c) Clinical	5	..	1	57	4'45	..	1	..	..	1	1	7	..	..	357	2	3	13'06	—	—
Encephalitis Lethargica . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric fever . . . . .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	150	30
(a) Typhoid	8	..	..	42	6'40	6	4	6	2	1	..	1	..	..	23	4	1	4'06	8	5
Paratyphoid Fever B. Carrier . . . . .	..	..	..	1	'03	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhoid Fever Carrier . . . . .	..	..	..	2	'03	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

(b) Paratyphoid A	1	...	...	21	2'87	1	...	4	...	2	...	7	...	...	12	2	1	2'64	10	1
(c) " B . . . . .	...	...	...	10	2'13	...	...	...	...	...	...	...	...	...	4	...	...	0'33	1	—
(d) " C . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e) Enteric Clinical	10	...	...	68	10'94	5	4	3	...	7	2	4	...	...	37	1	2	4'75	...	...
Enteritis infective . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42	13
Erysipelas . . . . .	...	...	...	8	'30	...	...	...	...	...	...	1	...	...	6	1	...	'59	30	6
Gangrene, acute infective . . . . .	...	...	...	...	...	...	...	...	...	5	...	...	...	...	3	...	2	'51	4	—
Influenza	75	...	...	116	4'46	1	...	6	...	...	...	13	...	...	460	15	...	12'88	1,588	10
Jaundice spirochaetal . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	0'06	...	...
(a) Kala-azar	2	...	...	4	0'60	...	1	1	...	...	...	...	...	...	4	1	1	0'74	135	18
(b) Tropical sore	2	...	...	31	1'76	...	...	...	...	...	...	14	...	...	279	...	1	24'83	...	...
Leprosy . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	12	1'17	130	10
Malaria	298	...	3	10,875	291'89	17	29	200	1	215	2	330	...	1	22,646	99	302	722'00	26,900	131
Measles	2	...	...	14	0'58	...	...	1	...	105	...	...	...	...	213	4	...	10'57	40	...
Mediterranean fever . . . . .	...	...	...	4	'67	...	1	...	...	...	...	...	...	...	2	...	1	0'76	2	1
Meningococcal infection . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	6	...	0'69	27	23
Mumps	4	...	...	12	0'78	...	...	1	...	5	...	...	...	...	398	...	...	19'65	1,131	...
Plague . . . . .	...	...	...	1	'07	...	...	...	...	...	...	1	...	...	47	19	...	2'37	7	3
Pyæmia . . . . .	...	...	...	2	'28	1	...	...	...	...	...	...	...	...	1	...	...	'25	2	1
Pyrexia of uncertain origin	2	...	...	37	3'58	1	...	1	...	1	...	2	...	...	32	1	1	1'68	2,404	3
Rabies . . . . .	...	...	...	1	'01	1	...	...	...	...	...	...	...	...	1	1	...	'01	6	—
Relapsing fever . . . . .	...	...	...	3	'27	...	...	1	...	...	...	...	...	...	33	...	...	2'02	159	5
Rheumatic fever	9	...	1	119	12'48	2	14	6	...	...	...	3	...	...	101	1	12	6'35	616	3
Rubella . . . . .	...	...	...	5	'29	...	...	...	...	11	...	1	...	...	2	...	...	0'08	...	...
Sand-fly fever	77	1,803	33'64	15	...	11	...	49	1,730	37'06	877	—
Scarlet fever	4	10	'91	2	...	6	...	3	1	'11	1	—

* Not available.

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TABLE XXIII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.							JAIL POPULATION OF INDIA.		
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS. 2,788			MEN. 63,139				WOMEN. 5,762		CHILDREN. 7,845		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS. 2,248			MEN PRESENT ENROLLED. 143,234					Constantly sick.
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.	Invalids.			
DISEASES CAUSED BY INFECTION—consid.																				
Septicæmia	1	...	...	8	62	5	1	1	...	...	...	...	...	4	3	...	0'08	9	5
Small-pox	3	1	...	14	1'37	3	...	5	...	2	1	...	...	15	...	...	0'95	56	1'
Tetanus . . . . .	...	...	...	...	...	...	...	1	...	...	...	...	...	5	2	...	0'20	6	3
Tubercular disease undefined . . . . .	...	...	...	2	14	...	...	...	...	2	...	...	...	10	1	8	2'09	160	44
Typhus fever . . . . .	...	...	...	...	...	...	...	...	...	...	...	1	...	5	3	...	0'34	...	—
(a) Syphilis, Congenital . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	—
(b) ,, acquired	1	...	1	678	65'13	2	4	2	...	3	2	1	...	1,310	...	46	141'11	1,285	16	
(c) Gonorrhœa . . . . .	...	...	...	3,064	379'63	...	5	...	...	2	...	3	...	1,312	...	62	122'66	515	...
(d) Soft chancre . . . . .	...	...	...	762	72'47	...	1	...	...	...	...	...	...	818	...	9	75'45	239	—
Whooping-cough . . . . .	...	...	...	...	...	...	...	...	...	18	1	...	...	2	...	...	0'08	...	...
Other diseases caused by infection . . . . .	...	...	1	26	6'22	2	23	...	...	6	2	...	...	7	...	...	0'56	248	3
DISEASES OF THE NERVOUS SYSTEM.																				
Aphasia . . . . .	...	...	...	1	00	...	1	...	...	...	...	...	...	2	...	2	0'25	1	...
Cerebral hæmorrhage . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	0'01	8	8

Chorea . . . . .	...	...	...	2	'12	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Convulsions of Infancy . . . . .	...	...	...	...	...	...	...	...	...	12	7	...	...	...	...	...	...	...	...	...
Diseases of the Spinal Cord . . . . .	...	...	...	9	1'06	...	10	...	...	...	...	...	...	7	1	6	1'14	5	—	...
Epilepsy	2	...	2	57	4'11	...	31	4	...	3	...	...	...	75	1	48	4'03	110	5	...
Meningitis . . . . .	...	...	...	...	...	...	...	...	...	5	4	...	...	4	4	...	'07	7	6	...
Neuralgia	3	...	1	33	1'45	...	...	11	...	...	...	3	...	58	...	1	1'67	167	...	...
Neuritis	8	...	1	32	3'14	1	3	3	...	...	...	2	...	114	1	18	8'90	41	1	...
Neurasthenia	17	...	6	71	6'57	...	20	25	...	...	...	9	...	1	...	4	2'24	11	4	...
Other diseases of the Nervous System	9	1	2	162	6'73	4	11	20	...	9	1	3	...	159	2	18	9'85	247	15	...	
MENTAL DISEASES.																					
Feeble-mindedness . . . . .	...	...	...	8	1'24	...	5	1	...	...	...	...	...	12	...	12	0'74	3	...	...
Dementia . . . . .	...	...	...	7	2'12	...	9	...	...	...	...	...	...	5	...	3	0'34	3	1	...
Mania	1	...	...	2	'78	...	5	2	...	...	...	...	...	19	1	16	1'70	29	1	...
Melancholia . . . . .	...	...	...	11	1'20	...	9	...	...	...	...	...	...	13	...	10	'92	32	...	...
Delusional Insanity . . . . .	...	...	...	26	3'95	...	13	...	...	...	...	2	...	1	...	10	'89	11	...	...
Other Mental Diseases . . . . .	...	...	...	9	'94	...	5	...	...	1	...	...	...	8	...	3	'38	21	...	...
DISEASES OF THE EYE.																					
Cataract . . . . .	...	...	...	5	'08	...	6	1	...	...	...	...	...	18	...	11	2'00	24	...	...
Conjunctivitis	4	...	...	113	6'30	...	1	5	...	41	...	4	...	983	...	11	36'05	1,465	...	...
Keratitis . . . . .	...	...	...	31	2'29	...	3	2	...	...	...	...	...	314	...	27	20'93	313	...	...
Amblyopia . . . . .	...	...	...	12	'18	...	10	...	...	...	...	...	...	3	...	...	'08	...	...	...
Errors of refraction . . . . .	...	...	...	131	1'76	...	97	1	...	2	...	...	...	58	...	18	2'41	...	...	...
Blepharitis . . . . .	...	...	...	10	'45	...	1	2	...	...	...	...	...	10	...	1	0'37	22	...	...
Glaucoma . . . . .	...	...	...	2	'01	...	1	...	...	...	...	...	...	...	...	2	0'33	12	...	...
Iritis	1	...	...	11	1'14	...	2	...	...	...	...	1	...	39	...	8	2'96	40	...	...
Trachoma . . . . .	...	...	...	2	'31	...	...	...	...	...	...	1	...	249	...	45	16'60	46	...	...
Other diseases of the eye	1	...	...	48	2'14	...	21	1	...	4	...	...	...	194	...	53	12'21	131	1	...

TABLE XXIII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.						Constantly sick.	JAIL POPULATION OF INDIA.	
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.			WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN PRESENT ENROLLED.				Admissions.	Deaths.
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.				Invalids.
DISEASES OF THE EAR.																			
Inflammation of external ear	4	...	...	131	3'92	...	...	...	...	5	...	...	...	53	...	...	1'83	92	...
Diseases of the middle ear	7	...	...	310	12'21	3	120	2	...	8	...	2	...	358	...	77	24'32	166	...
Diseases of the mastoid process . . . . .	...	...	...	13	'86	...	2	...	...	2	...	...	...	7	1	...	0'48	16	...
Other diseases of the ear	1	...	...	22	'50	...	8	...	...	...	...	6	...	21	...	1	0'79	36	...
DISEASES OF THE NOSE.																			
Adenoid vegetations . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the mucous membrane	14	...	...	115	2'74	...	...	5	...	10	...	15	...	405	...	5	11'14	655	1
Diseases of the bone and cartilage . . . . .	...	...	...	15	'92	1	1	...	...	...	...	...	...	3	...	...	'17	...	...
Other diseases of the nose	1	...	...	7	'29	...	...	...	...	...	...	1	...	7	...	...	'28	12	—
DISEASES OF THE CIRCULATORY SYSTEM.																			
Disordered action of the heart	11	...	1	272	14'85	1	73	12	1	2	...	3	...	277	7	57	22'41	17	2
Diseases of the heart valves	1	1	1	81	7'09	5	37	6	1	2	...	...	...	64	7	38	3'73	129	34
Diseases of blood vessels	5	...	...	89	5'55	1	9	11	...	...	...	7	1	44	...	9	3'02	...	1
Endocarditis	1	...	...	9	1'32	3	4	...	...	1	1	...	...	3	2	...	'08	5	3
Other circulatory diseases	2	...	1	22	1'58	6	10	3	...	2	1	5	...	27	15	7	1'89	103	34

DISEASES OF THE BLOOD.																				
Anæmia primary	2	...	2	64	2'44	...	...	116	...	21	...	1	...	...	255	4	14	14'71	421	14
" pernicious . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	4	8	1'21	1	—
" Secondary . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	—
Debility	1	...	...	12	'66	...	...	12	...	1	...	...	...	...	200	4	22	14'68	375	11
Other blood diseases . . . . .	...	...	...	1	'22	...	1	1	1	2	1	...	...	...	3	...	1	'32	4	1
DISEASES OF THE SPLEEN.																				
Other diseases of the spleen . . . . .	...	...	...	3	'09	...	...	...	...	...	...	...	...	...	78	1	2	3'47	76	4
DISEASES OF THE LYMPHATIC SYSTEM.																				
Inflammation of the lymphatic glands	5	...	...	305	24'02	...	1	6	...	19	...	2	...	...	332	...	51	24'03	280	...
Inflammation of lymphatic vessels . . . . .	...	...	...	12	0'81	...	...	...	...	1	...	1	...	...	6	...	...	'43	33	...
Other diseases of the lymphatic system . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	'05	73	3
DISEASES OF GLANDS OF INTERNAL SECRETION.																				
Hyperthyroidism . . . . .	...	...	...	2	'25	...	1	...	...	...	...	...	...	...	...	...	1	'08	—	...
Goitre . . . . .	...	...	...	25	1'03	...	9	2	...	...	...	...	...	...	5	...	1	'35	4	—
Other diseases of glands of internal secretion . . . . .	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	1
DISEASES OF THE BREAST.																				
Inflammation . . . . .	...	...	...	5	'22	...	...	8	...	1	...	...	...	...	...	...	...	...	5	...
Other diseases of the breast . . . . .	...	...	...	3	'19	...	...	12	...	...	...	...	...	...	...	...	...	...	35	—
DISEASES OF THE RESPIRATORY SYSTEM.																				
Asthma	1	...	...	43	2'24	1	8	4	...	3	4	1	...	...	119	1	42	9'15	755	14
Bronchitis	77	...	...	913	31'91	...	18	75	...	237	4	48	...	...	3,843	2	58	150'77	2,895	40
Empyema . . . . .	...	...	...	13	2'31	...	5	4	...	...	...	...	...	...	6	2	3	1'66	6	2

TABLE XXII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.						JAIL POPULATION OF INDIA.			
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.			WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN PRESENT ENROLLED.						
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.	Invalids.	Constantly sick.	Admissions.	Deaths.
DISEASES OF THE RESPIRATORY SYSTEM—contd.																				
Laryngitis	2	...	...	40	1'22	...	2	2	...	4	...	6	...	...	101	...	1	3'58	21	2
Pleurisy	12	...	2	114	6'11	...	2	4	...	2	...	2	...	...	262	6	28	19'51	313	9
Pneumonia . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,354	337
(a) Lobar	12	2	2	196	14'85	12	1	3	1	12	5	5	2	...	1,364	253	12	95'01	68	29
(b) Lobular	9	1	1	48	2'98	6	...	4	...	30	10	3	1	...	608	90	10	50'99	45	14
Pulmonary tuberculosis	3	...	4	70	18'49	8	55	4	1	1	1	1	...	1	458	28	473	36'21	1,031	340
Other diseases of the Respiratory System	3	...	...	8	'29	...	1	2	...	...	...	2	...	...	40	4	15	3'90	50	9
DISEASES OF THE TEETH AND GUMS.																				
Caries of the dentine cement and enamel	1	...	...	38	1'08	...	2	4	...	4	...	3	...	...	25	...	1	0'58	29	—
Gum-boil . . . . .	...	...	...	20	'65	...	...	2	...	...	...	1	...	...	111	...	1	3'41	247	—
Pyorrhœa alveolaris . . . . .	...	...	...	3	'09	...	...	2	...	...	...	4	...	...	202	...	49	10'16	121	...
Other diseases of the Teeth and Gums	3	...	...	66	1'39	...	...	3	...	50	...	...	...	...	67	...	2	2'08	91	1

DISEASES OF THE DIGESTIVE SYSTEM.

Stomatitis	2	...	...	18	0'51	...	...	6	...	10	...	...	...	60	...	...	2'82	189	...
Tonsillitis	82	...	...	1,475	36'19	...	...	67	...	89	...	37	...	635	...	2	16'00	99	...
Hypertrophy of the tonsils inflammation of the palate and pillars of fauces . . . . .	...	...	...	12	'31	...	...	...	...	2	...	...	...	5	...	...	'28	...	...
Diseases of Pharynx and Oesophagus	14	...	...	157	2'94	...	...	8	...	14	...	24	...	1,264	...	...	28'12	359	...
Gastritis	45	...	...	273	8'86	1	4	54	...	35	3	23	1	179	2	4	7'05	187	4
Indigestion	16	...	1	165	4'33	...	...	52	...	12	...	16	...	328	...	2	12'15	1,266	1
Enteritis	23	...	...	108	4'07	...	...	15	...	147	32	9	...	375	6	6	20'95	453	59
Colitis	19	...	...	222	8'61	...	...	19	...	27	4	27	...	1,755	6	5	61'20	2,029	18
Fistula in ano	4	...	1	7	'26	...	...	1	...	...	...	...	...	49	...	2	4'05	64	...
Hernia . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42	2
(a) Inguinal . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	56	1
(b) Other hernias	3	...	...	122	10'16	...	4	2	...	12	...	5	...	83	1	24	7'57	1	—
Intestinal obstruction . . . . .	...	...	...	8	'24	6	...	...	...	1	1	1	...	7	3	...	'49	23	8
Appendicitis	20	...	...	202	17'19	5	4	17	2	7	1	13	...	88	6	3	6'45	53	4
Sprue	2	...	...	4	0'78	...	1	...	...	1	...	...	...	7	2	1	'77	34	18
Hæmorrhoids	7	...	...	208	9'32	...	...	4	...	...	...	8	...	262	...	17	14'62	506	2
Diarrhoea	48	...	...	515	12'35	...	...	60	...	191	6	38	...	1,952	...	7	47'79	3,745	48
Constipation	5	...	...	285	5'98	...	...	47	...	61	...	7	...	792	...	...	13'71	655	...
Colic	20	...	...	172	3'52	...	...	12	...	6	...	3	...	162	...	...	3'32	417	2
Acute hepatitis	21	...	1	128	8'24	...	...	4	...	2	...	11	...	98	2	3	5'98	115	2
Abscess of the liver	1	...	...	21	2'99	3	8	3	...	...	...	2	...	10	...	2	1'37	6	3
Cirrhosis of the liver . . . . .	...	...	...	1	'08	...	...	1	1	...	...	...	...	6	2	3	'32	50	29
Jaundice, obstructive	52	...	...	802	34'02	1	...	8	...	9	...	27	...	491	1	...	29'68	397	11
Cholecystitis including gall-stones . Other diseases of the Digestive System	4	...	...	12	1'22	1	2	4	...	...	...	1	...	28	1	2	0'92	5	2
	14	...	...	159	8'09	6	9	23	1	13	1	14	...	212	15	26	12'92	424	49

TABLE XXIII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.						JAIL POPULATION OF INDIA.			
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.			WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN PRESENT ENROLLED.						
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.	Invalids.	Constantly sick.	Admissions.	Deaths.
DISEASES DUE TO DISORDERS OF NUTRITION OR OF METABOLISM.																				
Inanition	1	13	'48	5	...	21	5	18	...	4	0'67	12	1
Rickets	1	'01	...	1	5	1
Scurvy	1	15	1'20	42	3
Beri-beri . . . . .	...	...	...	...	'11	...	...	...	...	...	...	...	...	75	12	...	5'80	18	...
Gout	5	'16	1	1	...	1	0'02	1	...
Diabetes mellitus . . . . .	...	...	...	1	'23	...	...	...	...	...	...	...	...	9	1	6	0'47	22	4
Other diseases due to disorders of Nutrition or of Metabolism	2	1	...	2	'06	...	...	...	...	...	...	...	...	2	...	...	0'15	14	1
DISEASES OF THE MALE ORGANS OF GENERATION.																				
Phimosis	1	...	...	97	6'07	...	...	...	...	10	...	...	...	50	...	...	2'94	58	...
Paraphimosis . . . . .	...	...	...	12	'94	...	...	...	...	1	...	...	...	11	...	...	0'54	20	...
Balanitis . . . . .	...	...	...	88	3'29	...	...	...	...	1	...	...	...	20	...	...	0'99	10	...
Urethritis . . . . .	...	...	...	112	'494	...	...	...	...	...	...	...	...	87	...	...	4'00	87	...

Stricture of the urethra . . . . .	...	...	...	6	31	1	...	...	...	...	...	...	...	...	10	...	...	0'40	33	3
Urethral fistula . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	...
Hypertrophy of the prostate . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	0'15	...	...
Hydrocele of tunica vaginalis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	1	1'47	129	...
Varicocele	1	...	...	51	3'02	1	...	...	...	...	...	...	...	...	10	...	1	0'56	3	—
Epididymitis . . . . .	...	...	...	37	2'05	...	...	...	...	...	...	...	...	...	33	...	...	1'52	11	...
Other diseases of the male organs of generation.	4	...	...	185	10'33	...	...	...	...	...	4	...	...	...	222	...	4	10'27	333	...
DISEASES OF THE FEMALE ORGANS OF GENERATION.																				
Diseases of the ovary . . . . .	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the fallopian tube . . . . .	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	3
Pelvic peritonitis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Endometritis . . . . .	...	...	...	...	...	...	...	40	...	...	...	...	...	...	...	...	...	...	...	1
Displacements and distortions of the uterus.	...	...	...	...	...	...	...	22	...	...	...	...	...	...	...	...	...	...	...	2
New growths, non-malignant of uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysmenorrhœa . . . . .	...	...	...	...	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	4
Menorrhagia . . . . .	...	...	...	...	...	...	...	20	...	...	...	...	...	...	...	...	...	...	...	7
Metrorrhagia . . . . .	...	...	...	...	...	...	...	25	...	...	...	...	...	...	...	...	...	...	...	...
Abortion . . . . .	...	...	...	...	...	...	...	118	1	...	...	...	...	...	...	...	...	...	...	7
Hæmorrhage associated with parturition.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other diseases peculiar to women . . . . .	...	...	...	...	...	...	...	39	...	2	...	...	...	...	...	...	...	...	...	12
Other affections consequent on pregnancy and parturition.	...	...	...	...	...	...	...	68	6	...	...	...	...	...	...	...	...	...	...	35
DISEASES AFFECTING CHILD.																				
Still birth . . . . .	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Asphyxia of child . . . . .	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...
Premature birth . . . . .	...	...	...	...	...	...	...	1	...	8	10	...	...	...	...	...	...	...	...	...

TABLE XXIII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.										INDIAN ARMY.						Constantly sick.	JAIL POPULATION OF INDIA.		
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.			WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN PRESENT ENROLLED.				Admissions.	Deaths.	
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.				Invalids.
DISEASES OF THE ORGANS OF LOCOMOTION.																				
Osteo-myelitis . . . . .	...	...	...	3	0'65	...	2	...	...	...	...	...	...	9	...	2	0'65	4	2
Periostitis . . . . .	...	...	...	18	2'44	...	1	...	...	...	...	1	...	65	...	4	4'61	9	...
Other diseases of bone, periosteum and cartilage.	...	...	...	8	1'07	1	5	...	...	...	...	1	...	16	...	4	2'00	...	...
Arthritis	1	...	...	69	4'87	...	6	1	...	2	...	4	...	90	1	25	8'34	58	1
Synovitis	30	...	...	592	27'75	...	3	1	...	...	...	26	...	514	...	21	26'43	219	...
Other diseases of joints	7	...	1	52	3'34	...	6	1	...	...	...	3	...	82	1	20	5'48	8	...
Disease of the Spine . . . . .	...	...	...	5	1'61	...	5	2	...	...	...	...	...	7	...	4	0'86	188	...
Myalgia	39	...	...	446	11'90	...	...	59	...	4	...	12	...	430	...	3	13'71	429	...
Flat-foot . . . . .	...	...	...	42	0'81	...	33	...	...	...	...	...	...	6	...	1	0'54	...	...
Hammer toe . . . . .	...	...	...	58	3'62	...	1	...	...	...	...	...	...	1	...	...	0'05	...	...
Other deformities of the limbs . . . . .	...	...	...	33	1'27	...	16	...	...	...	...	...	...	...	...	...	0'20	1	—
Other diseases of the organs of locomotion.	2	...	...	36	1'62	...	3	2	...	3	...	2	...	69	...	8	3'28	97	2

DISEASES OF THE AREOLAR TISSUE.

Cellulitis	87	...	1	1,805	70'85	1	5	30	...	66	...	32	...	2,244	1	16	104'16	1,095	5
Abscess	10	...	...	235	11'27	...	1	11	...	10	...	9	...	980	1	8	42'02	3,326	4
Other diseases of the Areolar Tissue . . . . .	...	...	...	7	'32	...	...	1	...	8	...	...	...	7	...	2	0'54	13	—

DISEASES OF THE SKIN.

Dermatitis	6	...	...	66	3'52	...	2	3	...	2	...	3	...	183	...	3	7'78	49	...
Ulcer	2	...	...	29	1'42	...	...	1	...	...	...	3	...	444	...	3	37'85	2,358	1
Boil	18	...	...	338	11'13	...	...	8	...	24	...	13	...	595	...	...	19'53	830	2
Carbuncle . . . . .	...	...	...	13	'63	...	...	1	...	1	...	1	...	12	...	...	0'89	87	...
Urticaria	1	...	...	30	'68	...	...	4	...	4	...	1	...	68	...	...	1'99	60	...
Impetigo	4	...	...	209	9'45	...	...	...	...	18	...	1	...	47	...	...	2'27	7	...
Eczema	1	...	...	86	4'87	...	...	3	...	6	...	2	...	331	...	5	15'96	372	...
Psoriasis . . . . .	...	...	...	25	1'55	...	2	...	...	...	...	2	...	11	...	1	1'11	18	...
Wart . . . . .	...	...	...	48	2'69	...	...	...	...	...	...	...	...	12	...	...	0'52	2	...
Scabies . . . . .	...	...	...	124	4'31	...	...	1	...	...	...	1	...	802	...	...	32'66	976	...
Favus . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
Pediculosis . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	0'27	...	...
Tinea	1	...	...	96	3'52	...	...	2	...	7	...	...	...	244	...	2	10'60	2	...
Acne . . . . .	...	...	...	9	'30	...	...	...	...	...	...	...	...	11	...	...	0'52	...	...
Prickly heat . . . . .	...	...	...	10	'24	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Sycosis . . . . .	...	...	...	12	1'01	...	...	...	...	...	...	...	...	27	...	...	1'41	2	...
Onychia	1	...	...	50	2'21	...	...	1	...	...	...	1	...	7	...	...	0'25	20	...
Whitlow	1	...	...	32	1'33	...	...	3	...	1	...	1	...	115	...	1	6'38	302	...
Ingrowing toe nail . . . . .	...	...	...	93	5'13	...	...	1	...	...	...	...	...	3	...	...	0'10	...	...
Other diseases of the skin	2	...	...	108	4'27	...	2	1	...	6	...	2	...	186	...	4	6'12	390	...

TABLE XXIII—continued.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.											INDIAN ARMY.						Constantly sick.	JAIL POPULATION OF INDIA.	
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.			WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN PRESENT ENROLLED.			Admissions.		Deaths.	
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.				Invalids.
DISEASES OF THE URINARY ORGANS.																				
Acute nephritis	2	27	1'76	4	3	7	...	4	...	1	28	2	9	2'40	83	11
Chronic nephritis . . . . .	...	...	...	3	'37	1	...	2	1	...	...	...	...	9	...	7	0'61	101	34
Cystitis	5	...	...	32	1'66	...	...	5	...	...	...	2	...	33	...	1	1'95	44	1
Calculus of bladder . . . . .	...	...	...	1	'01	...	...	...	...	...	...	...	...	5	...	2	0'83	3	—
Incontinence of urine . . . . .	...	...	...	20	'84	...	10	...	...	...	...	...	...	2	...	...	0'06	1	—
Hæmaturia . . . . .	...	...	...	18	'94	...	1	...	...	1	...	...	...	21	...	...	1'16	17	...
Other diseases of the urinary organs	8	...	2	63	6'95	2	5	14	8	...	1	82	2	5	3'69	82	6
GENERAL INJURIES.																				
Effect of heat due to climate	7	...	1	314	9'45	11	1	4	...	4	1	4	39	0'93
Heat-stroke and sun-stroke	83	3'68	23	...	1	1	3	1	9	4	...	0'14	106	36
Other general injuries	3	1	...	8	'10	12	1	...	6	10	1	0'19	24	—

LOCAL INJURIES.

Burns and scalds	4	...	...	63	3'56	1	3	6	...	14	1	1	...	...	255	2	1	11'47	209	...
Abrasions	9	...	...	200	7'45	...	...	1	...	6	...	7	...	...	257	...	1	9'45	80	...
Wounds, G. S. W.	10	5	1	77	7'22	11	24	...	...	1	...	11	3	1	248	59	57	26'52	43	3
General wounds	23	...	...	446	20'74	2	9	6	...	27	...	18	...	...	1,755	4	18	75'58	1,326	2
Contusion	48	...	...	546	26'44	1	2	3	...	7	...	29	...	...	1,527	1	12	55'08	557	...
Concussion	14	...	3	44	1'76	1	2	1	...	3	...	6	...	...	39	3	1	2'01	1	...
Sprain and strain	32	...	...	656	23'59	...	8	6	...	3	1	35	...	...	460	...	3	16'82	215	...
Fracture of bones and cartilages	38	...	5	477	39'83	9	29	6	...	25	...	47	...	...	757	23	101	75'79	399	11
Dislocation and displacement	11	...	...	91	7'31	...	3	...	...	1	...	4	...	...	84	2	13	6'24	32	...
Injuries self-inflicted	...	...	...	12	'81	11	1	...	...	...	...	...	...	...	8	14	...	0'34	...	...
Other local injuries	5	...	1	36	2'43	1	6	1	...	2	...	3	...	...	64	12	3	3'95	1,262	51

TUMOURS AND CYSTS.

Carcinoma	...	...	...	2	'21	2	...	...	...	...	...	...	...	...	4	...	1	0'60	5	5
Sarcoma	1	...	...	3	'88	2	2	...	...	...	...	...	...	...	4	3	1	0'33	4	3
Other malignant new growths	2	...	1	1	'05	...	...	4	...	...	...	...	...	...	...	1	...	0'01	1	—
New growths, non-malignant	...	...	...	40	2'54	...	4	...	...	...	...	...	...	...	51	...	4	3'33	9	...
Cysts	1	...	...	61	3'00	...	...	3	...	...	...	2	...	...	76	1	2	3'48	55	...

MALFORMATIONS.

POISONS.

Arsenic	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	2	1
Delirium Tremens	2	...	1	17	'87	2	1	...	...	...	1	...	1	1	1	2	...	...	...	...
Chloroform and other anæsthetic drugs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3	...	0'03	...	...
Other chemical poisons	...	...	...	1	'08	...	...	...	...	...	1	...	...	...	4	2	...	0'06	...	...
Vaccines and sera	2	...	...	3	'06	...	...	2	...	1	...	...	...	...	10	...	...	0'16	...	...
Snakes	...	...	...	4	'07	...	...	...	...	...	...	...	...	...	13	2	...	0'44	15	1
Insects	3	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	0'30	4	...

TABLE XXII—concluded.

DETAIL of DISEASES.

DISEASES.	EUROPEAN ARMY OF INDIA.											INDIAN ARMY.					JAIL POPULATION OF INDIA.			
	BRITISH OFFICERS ATTACHED TO EUROPEAN TROOPS.			MEN.				WOMEN.		CHILDREN.		BRITISH OFFICERS ATTACHED TO INDIAN TROOPS.			MEN-PRESENT ENROLLED.		Constantly sick.	JAIL POPULATION OF INDIA.		
	Admissions.	Deaths.	Invalids.	Admissions.	Constantly sick.	Deaths.	Invalids.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Invalids.	Admissions.	Deaths.		Invalids.	Admissions.	Deaths.
POISONS—contd.																				
Vegetable poisons	1	10	1	9	2	1	0'18	159	2
All other poisons	1	12	32	5	...	1	1	1	...	0'00	3	...
DISEASES DUE TO ANIMAL PARASITES.																				
Ankylostomum duodenale . . . . .	...	...	...	2	07	...	...	...	...	...	...	...	...	128	2	5	0'63	11,023	41
Ascaris lumbricoides . . . . .	...	...	...	4	13	...	...	...	...	3	...	1	...	52	...	...	1'56	17	...
Bilharziosis . . . . .	...	...	...	3	31	...	...	...	...	...	...	...	...	24	...	2	3'93	...	...
Guinea worm . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	208	...	8	14'89	40	...
Tænia solium	9	...	...	57	1'33	...	...	11	...	35	...	3	...	96	...	...	3'68	3	...
Other intestinal parasites . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	...	0'49	3	...
All other animal parasites	3	...	...	20	35	...	...	2	...	7	...	1	...	9	...	...	0'24	276	...
No appreciable disease	2	...	...	91	2'96	...	...	160	...	48	...	2	...	68	...	...	1'89	58	...
Anti-rabic treatment	2	...	...	31	43	...	...	1	...	5	...	...	...	37	...	...	0'29	...	...
All other causes . . . . .	...	...	...	11	50	...	3	...	...	4	...	...	...	3	5	...	0'43	...	...
All causes	1,665	15	57	37,595	1,793'31	232	979	1,916	22	2,152	127	1,215	10	13,66,847	856	2,328	2,954'64	95,608	2,064	