

8th triennial report of vaccination in Bengal.

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EIGHTH TRIENNIAL REPORT
OF
VACCINATION IN BENGAL

FOR THE YEARS
1908-1909, 1909-1910 AND 1910-1911.

BY
W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,
Sanitary Commissioner for Bengal.



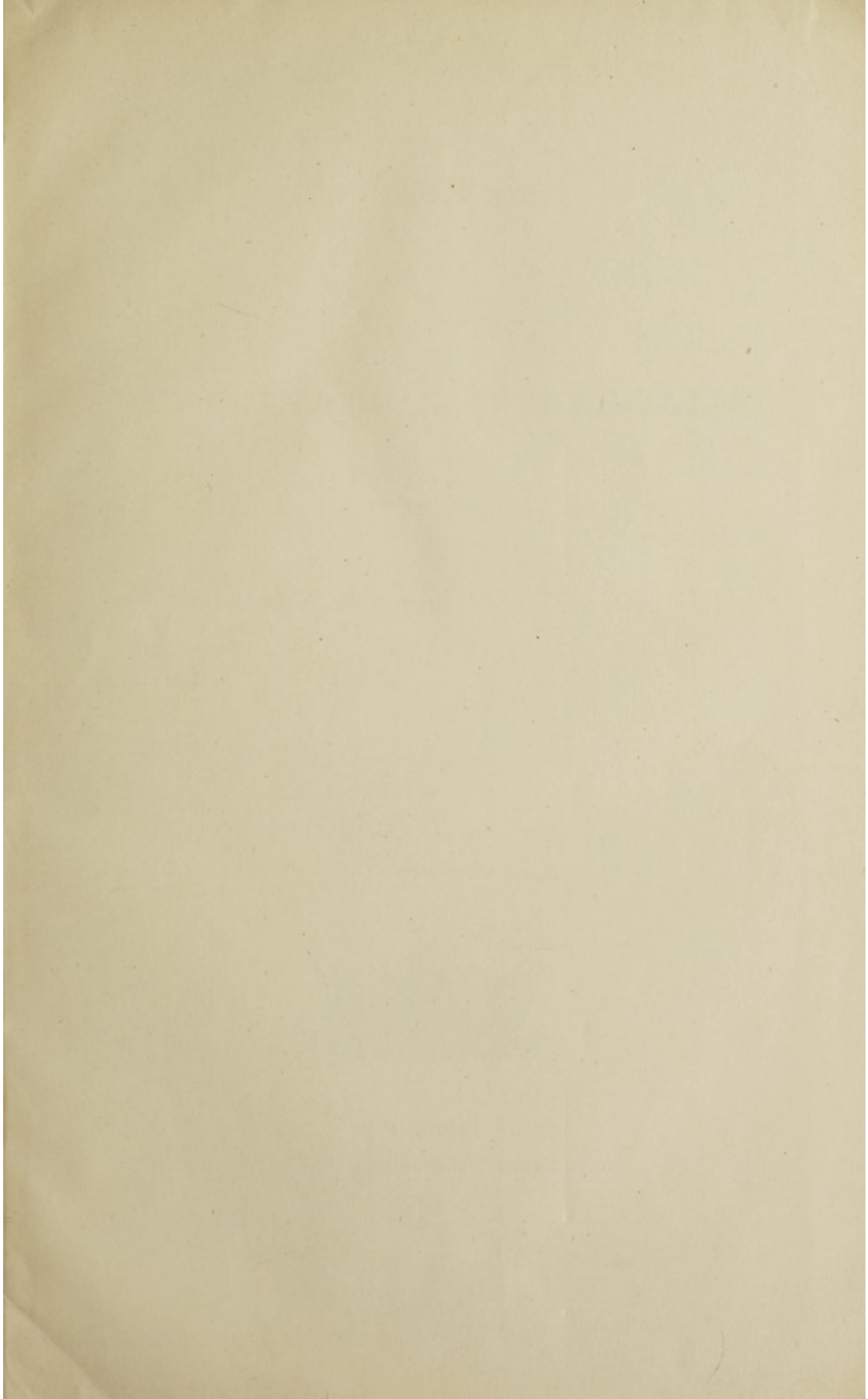
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TRIENNIAL REPORT
OF
VACCINATION IN BENGAL
FOR THE
YEARS 1908-09, 1909-10 and 1910-11.

This report deals with the triennial period 1908-09 to 1910-11.

Returns from the Tributary States of Orissa not having been received during the last two years, the figures for these States could not be shewn in this report. The figures of the previous triennial period used in this report for purposes of comparison have been obtained by excluding the figures of the Tributary States from those of the Province.

2. Lieutenant-Colonel F. C. Clarkson, I.M.S.,
Officer in charge of the Department. was in charge of the Department from 1st April 1908 to 28th February 1910, and I for the rest of the period.

In the Bengal and Orissa Circle Captain D. Munro, I.M.S., was in charge from 1st April to 24th November 1908, Lieutenant-Colonel F. R. Ozzard, I.M.S., from 25th November 1908 to 4th August 1909, and I from 5th August 1909 to 28th February 1910. It was without a Deputy Sanitary Commissioner from 1st March 1910 to 31st March 1911.

In the Bihar and Chota Nagpur Circle Captain W. C. Ross, I.M.S., was in charge throughout the triennial period.

3. In Calcutta the average number of inspecting officers and operators was 7 and 31, against 7 and 28 of 1906-08. In the provincial rural areas and mufassal municipalities and dispensaries, etc., the inspecting staff and operators, including apprentices, numbered 140 and 2,326, and 8 and 174, against 137, 2,265, 7 and 170, respectively, during the previous triennial period.

4. The total number of operations performed in the Province during the past year was 2,035,130, of which 1,929,222 were primary and 105,908 revaccination cases, against 2,053,773 (with 1,868,585 primary cases and 185,188 revaccinations) during 1909-10, and 2,019,531 with 1,810,213 primary cases and 209,318 revaccinations during 1908-09. The average of the triennial period under review was 2,036,145 with 1,869,340 primary cases and 166,805 revaccinations against 1,897,867, 1,776,002, and 121,865 of the previous triennial period 1905-06 to 1907-08. There was an average increase of 138,278 cases, of which 93,338 were in primary vaccination and 44,940 in revaccination. This is satisfactory, showing that steady progress in vaccination is being maintained.

The ratio of success under the two different heads—primary and revaccination—was 98.69 and 58.52 against 99.63 and 58.10 during 1905-06 to 1907-08.

The average work of a vaccinator was 1,049, against 1,003 of the previous triennial period. The average work of a licensed and paid vaccinator was 1,042 and 1,084, against 832 and 1,103, respectively, of 1906-08.

As compared with the preceding year there was an increase of operations in 17 districts, while 16 shewed a decrease during the year under review. The increase is specially noticeable in the following districts:—

Balasore	...	...	...	11,713
Ranchi	...	...	...	9,818
Saran	...	...	...	9,513
Singbhum	...	...	...	9,264
Hazaribagh	...	...	...	7,501
Sambalpur	...	...	...	6,510
Monghyr	...	...	...	6,166

The principal decrease occurred in Palamau (12,824, Birbhum (8,715), Midnapore (7,464), Gaya (6,988), Shahabad (6,872), Burdwan (6,804), Patna (6,107), Darjeeling (5,639), Jessore (5,589), and Howrah (5,225).

In Balasore the increase is attributed to (a) the good health of the district, (b) absence of famine and flood, (c) decrease in the prices of food-grains which enabled the poor to pay the vaccination fees, and (d) chiefly to the prolonged tour of the Civil Surgeon on account of the neglected condition of vaccination in the district. As regards Ranchi no explanation of the increase has been furnished by the Civil Surgeon. In Saran it is said to be due to an increase in the number of vaccinators, while in Singhbhum it is owing to operations having been carried on in larger areas than those taken up in the previous years. The Civil Surgeon of Hazaribagh attributes the increase to the fact that larger *elakas* were given to the vaccinators by reducing their number, which encouraged them to work harder in the hope of getting more fees. In Sambalpur the vaccinators attended to their work more regularly, there being less illness among them than in the previous year, and hence the increase, while in Monghyr it is attributed to the increased activity of the staff.

The decrease in vaccination in the districts named above is due to much less prevalence of small pox in the past year than in the previous one. The explanation may be considered satisfactory, as there is no doubt that the presence or absence of an epidemic outbreak of small-pox in a district affects the total number of operations performed in it.

5. During the past year 1910-11) out of 1,676,650, the estimated number of infants under one year available for vaccination (1,006,829, that is 600·50 per thousand, were successfully vaccinated against 534·54 during 1907-08, which was the last year of the previous triennial period. In two districts, viz., Ranchi and Sambalpur, the number of recorded protected infants exceeds the available population. This is evidently due to the inclusion of some children above one year of age in the returns by miscalculation of age on the part of illiterate vaccinators. Making due allowance for inaccuracies of this kind, it may be stated generally that there is a steady increase in infant vaccination from year to year.

In 24 districts (against 19 of 1907-08, the last year of the previous triennial period), viz., Ranchi, Sambalpur, Palamau, Cuttack, Hazaribagh, Murshidabad, Manbhum, Singhbhum, Balasore, Bhagalpur, Sonthal Parganas, Muzaffarpur, Nadia, Darjeeling, Monghyr, Purnea, Saran, Champaran, Angul, Darbhanga, Gaya, Midnapore, Burdwan and Bankura, the protection was over 500 per mille, while the lowest rate recorded, viz., in the district of Shahabad, is about 300 per thousand against 236 in Bankura in 1907-08.

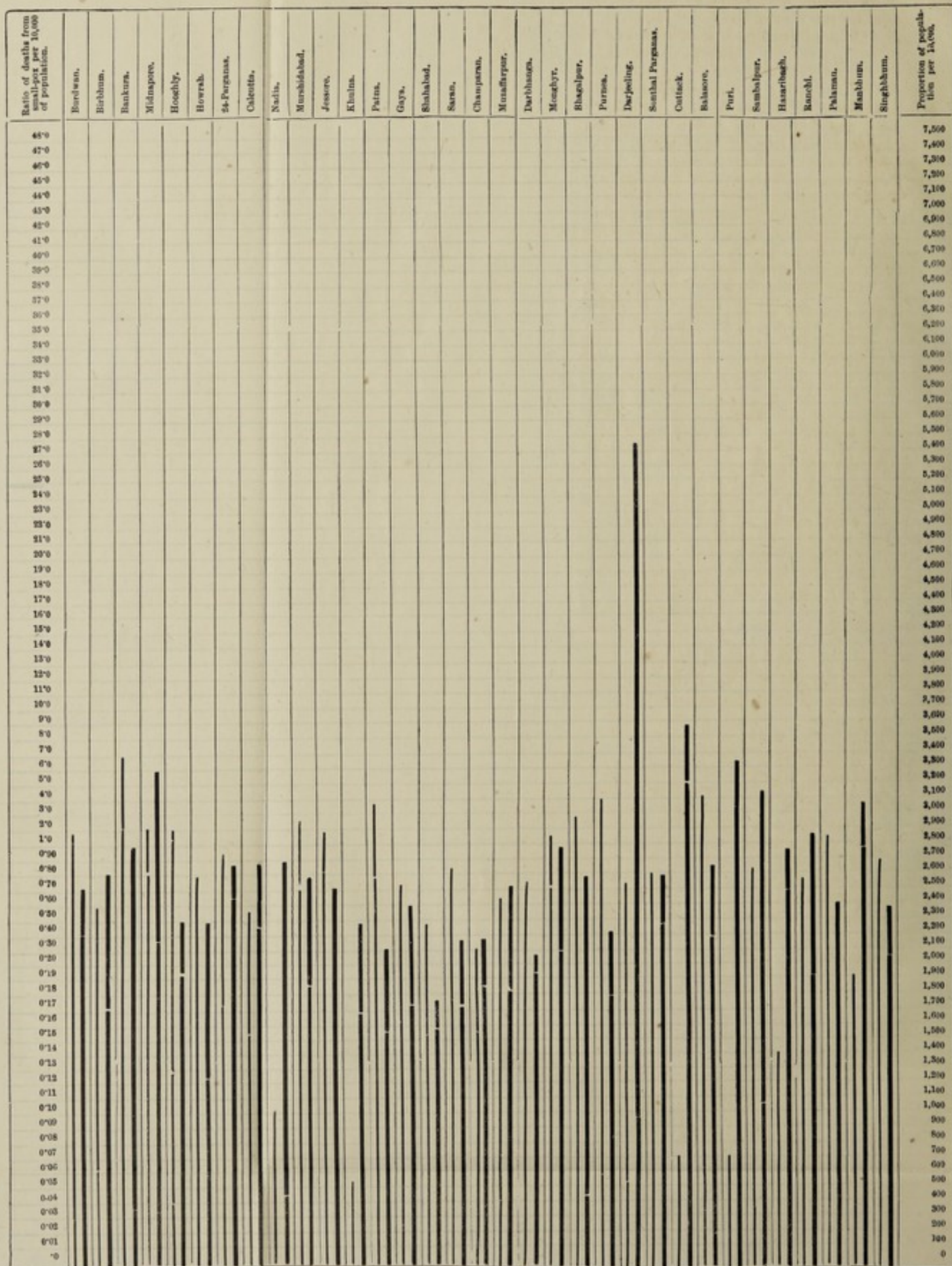
The protection afforded to infants in municipalities is shown in Appendix VII attached to the report. It will be seen that 773·68 per mille of the surviving infant population was protected during the past year, against 799·98 during 1909-10 and 942·30 during the year before. The attention of Civil Surgeons has as usual been drawn to their responsibility in the matter of infant vaccination in towns, wherever the protection is inadequate.

6. During the recess or non-working season of 1910-11, 141,142 operations were performed in connection with small-pox epidemics and the up-keep of lymph for emergencies, against 276,417 in 1909-10 and 181,243 in 1908-09. The average of the triennial period under review was 193,765, against 151,349 of 1906-08. The decrease in the number of operations during the recess season of the past year is due to much less prevalence of small-pox as compared with that of previous years.

7. During the past year 842,895 successful primary operations were performed in six points, against 822,512 in 1909-10 and 825,233 in 1908-09. The number of revaccinations was 12,305, against 20,061 in 1909-10 and 19,670 in 1908-09. The average of the triennial period in primary vaccination and revaccination was 830,213 and 17,345, against 773,687 and 9,140 of the previous epoch.

8. During 1910-11 the total number of primary and revaccination operations performed in factories and tea gardens in Bengal was 3,602 and 260, against 3,961 and 671, respectively, in 1909-10 and 2,945 and 1,403 in 1908-09. The ratio of success in primary and revaccination cases was 97·14

Diagram illustrating death-rates from small-pox, and degree of protection afforded, 1904-1911.



NOTE.—Thin lines indicate the death-rates from small-pox.
Thick lines indicate the proportion of population protected by vaccination.

and 81.15, against 95.22 and 63.78, respectively, during 1909-10 and 98.91 and 42.05 during the year before.

9. The total average cost of vaccination in Bengal for the triennial period under review was Rs. 2,03,526-15, against Rs. 1,70,555-9-8 of 1906-08, the cost of each successful vaccination being 1 anna 8 pies, against 1 anna 6 pies of 1906-08. A large portion of the increased cost is accounted for by the fact that in the statement for the period under review the cost of vaccination in the Calcutta Municipality has been shown for the entire period, whereas in the previous triennial report the cost on account of vaccination for this city for two years (viz., 1905-06 and 1906-07) could not be shown, the figures not being available.

Out of the average cost of vaccination as shown above Rs. 10,560 were contributed by District Boards, Rs. 355 by Native States, and Rs. 198 from other sources, the corresponding figures for the preceding triennial period being Rs. 7,943, Rs. 198, and Rs. 212, respectively.

10. The diagram facing this page illustrates the death-rates from small-pox in each district with side by side the proportion of population protected against the disease by vaccination during the past seven years.

11. During the past year the total number of deaths from small-pox in the Province was 6,174 only, against 25,582 of 1909-10 and 40,927 of 1908-09, the ratio of deaths per 1,000 of the population being .11, against .50 and .80, respectively, during the two preceding years. The past year's rate of mortality is the lowest recorded since 1888-89. The largest number of deaths was recorded in the districts of Purnea (735), Bankura (707), Bhagalpur (559), Patna (494), Balasore (442) and Midnapore (372), while the mortality was lowest in the districts of Khulna (7), Puri (8), Cuttack (16), Nadia and Hazaribagh (17) each, and Darjeeling (18).*

Out of 6,174 persons who died of small-pox, 3,133 were reported to have been vaccinated or otherwise protected, 1,955 were unprotected, and in 1,086 cases nothing could be ascertained. As already stated in previous reports these figures are of no value, being utterly untrustworthy.

12. The Animal Vaccination Depôt at Darjeeling was abolished with effect from the 1st January last. Prior to its abolition the number of calves vaccinated in it was 108 and the quantity of lymph manufactured was 30,444 grains, against 223 calves and 63,210 grains of lymph during 1909-10, and 235 calves and 69,073 grains of lymph during 1908-09. The number of calves vaccinated in the Calcutta Animal Vaccination Depôt during the past year was 2,194, and the quantity of lymph manufactured was 608,916, against 1,879 calves and 520,114 grains of lymph during 1909-10, and 1,610 calves and 420,943 grains of lymph during 1908-09.

13. During the past year 39,076 primary operations were performed with lymph taken direct from the calf, 1,261,364 with lanoline lymph, and 606,325 by arm-to-arm method, against 43,713, 932,528 and 829,737, respectively, during the preceding year and 73,424, 996,289 and 740,500 in the year before (1908-09). The ratio per cent. of success under each of these methods of vaccination was 98.01, 98.62 and 99.28, respectively, against 98.46, 98.35 and 99.00 during 1909-10 and 99.49, 98.31 and 99.12 during 1908-09.

The number of revaccinations under each of these processes of vaccination was 8,153, 87,856 and 4,458 with a success of 85.07, 58.81 and 60.25 per cent., respectively, against 11,486, 146,411 and 12,974 with a success of 66.81, 60.22 and 69.17 per cent. during 1909-10, and 8,301, 184,026 and 16,991 with a success of 76.83, 53.57 and 79.28 during the year before.

14. During 1910-11, seven hundred and forty grains of lymph were supplied to the Nepal Durbar from the Animal Vaccination Depôts, and 1,590 grains to the Sikkim State.

15. Captain W. C. Ross, I.M.S., Deputy Sanitary Commissioner, Bihar and Chota Nagpur Circle, made systematic tours every winter inspecting vaccination in outlying

* The very satisfactory result in the case of Puri and Cuttack is no doubt due to the adoption of special measures for pushing on vaccination in Orissa as detailed in paragraph 16(g) of the last triennial report.

parts of districts in Bihar and Chota Nagpur. The defects brought to notice by him were promptly remedied which resulted in much improvement in vaccination. During the past year he inspected 60,046 cases in 1,905 villages. The percentage of successful operations to total number of cases inspected by him was 94·67.

I also inspected over 7,201 vaccinations in the towns of Hazaribagh, Ranchi, Purnea, Purulia, Gaya, Chapra and Arrah and also in about 180 villages in the Patna, Gaya, Shahabad and Manbhum districts.

Among Civil Surgeons, 8, viz., the Civil Surgeons of Midnapore, Saran, Champaran, Muzaffarpur, Darbhanga, Sonthal Parganas, Puri and Singhbhum inspected over 10,000 operations each, 5 between 5,000 and 10,000, 14 between 2,000 and 5,000, 6 between 1,000 and 2,000, and 1 only less than 1,000. The percentage of success in primary and revaccination cases inspected by them was 97·87 and 61·73, respectively.

Of the subordinate inspecting staff 12 District Inspectors of Vaccination inspected more than 50 per cent. of the primary operations performed in their respective charges, 12 between 40 and 50, and 9 between 20 and 40 per cent.

In 18 districts the Sub-Inspectors of Vaccination inspected more than 80 per cent. of the primary operations performed in their jurisdictions, in 14 districts between 50 and 80 per cent., and in 2 only below 50 per cent.

The percentage of success reported by the Inspectors and Sub-Inspectors of Vaccination was 98·72 and 98·72 in primary cases and 54·11 and 58·53 in revaccination, the success reported by vaccinators in the returns being 98·76 and 59·35, respectively, under the above heads.

Suitable notice has as usual been taken departmentally of the inadequate inspections performed by the subordinate inspecting staff.

16. Two important changes were brought into effect during the past year, viz., (1) the introduction of the system of

General remarks. vaccination from prepared lymph in Chota Nagpur

in place of arm-to-arm vaccination which was in vogue, and (2) the abolition of the Darjeeling Animal Vaccination Depot. This depot was an expensive institution and it was unnecessary to maintain it, since the introduction of the system of preserving lymph in a cold storage chamber. The Calcutta depot has been able to maintain a reserve of six months' supply for the Province and is thus able to meet the entire demand for lymph.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,

Sanitary Commissioner for Bengal.

CALCUTTA,

The 9th June 1911.

STATISTICAL RETURNS.

STATEMENT No. I—Showing particulars of Vaccination in the

No.	DISTRICT.	Population.	Average population per square mile.	AVERAGE NUMBER OF VACCINATORS EMPLOYED THROUGHOUT THE YEAR.		TOTAL NUMBER OF PERSONS VACCINATED (INCLUDING THOSE VACCINATED BY APPRENTICES).						Average number of cases vaccinated by each vaccinator, i.e., excluding those done by apprentices.
				a	b	Primary.		Re-vaccination.		Total.	Total number of vaccinated cases by apprentices.	
						Males.	Females.	Males.	Females.			
1	2	3	4	5	6						7	
Burdwan Division.												
1	Burdwan ... Licensed ...	1,445,744	542	32	2	26,231	24,535	1,145	445	52,356	60	1,006
2	Birbhum ... { Paid by District Board Licensed ... }	893,588	510	(a) 32	...	70	55	2	...	127	...	1,001
3	Hankura ...	1,063,136	408	53	3	20,548	19,095	4,828	4,210	48,781	...	921
4	Midnapore ...	2,090,238	523	105	65	66,072	59,046	10,497	6,667	142,282	15,274	1,267
5	Hoochly ...	915,149	790	38	20	15,531	15,014	1,860	1,258	33,653	741	890
6	Howrah ...	679,691	1,364	24	...	10,567	10,158	135	57	20,917	...	871
	Total of Burdwan Division { Paid by District Board Licensed ... }	7,696,546	557	284	90	154,579	142,583	19,266	13,193	329,921	16,075	1,133
	Total ...	...	...	284	90	154,940	142,638	19,268	13,193	330,048	16,075	1,134
Presidency Division.												
7	24-Parganas ... Licensed ...	1,680,229	846	64	7	31,735	30,506	568	207	62,956	...	903
8	Calcutta ... Paid ...	847,796	42,389	38	...	12,483	9,974	4,096	1,345	27,898	...	734
9	Nadia ... Licensed ...	1,563,212	568	50	13	28,509	26,760	107	48	55,424	1,429	1,080
10	Murshidabad ...	1,240,128	591	46	16	24,061	23,213	269	82	47,565	3,740	933
11	Jessore ...	1,791,856	614	62	11	36,669	34,061	2,133	2,783	75,646	628	1,210
12	Khulna ...	1,226,782	596	35	29	22,243	21,705	419	365	44,732	6,335	1,123
	Total of Presi- dency Division. { Paid Licensed ... }	8,329,003	706	38	76	12,483	9,974	4,096	1,345	27,898	...	734
	Total ...	...	...	257	76	143,217	136,245	3,376	3,485	286,323	12,172	1,073
	Total ...	...	...	295	76	155,700	146,219	7,472	4,830	314,221	12,172	1,029
Patna Division.												
13	Patna ... Licensed ...	1,403,215	685	68	31	20,509	18,847	47	...	39,403	4,770	519
14	Gaya ... { Paid by District Board Licensed ... }	1,972,336	420	8	...	3,419	3,041	194	44	6,698	...	847
15	Shahabad ...	1,844,390	423	65	27	29,750	29,505	2	3	59,256	1,628	892
	Shahabad ...	...	...	93	8	18,824	17,782	2	...	36,608	507	389
	Total of Patna Divi- sion. { Paid by District Board Licensed ... }	5,220,141	470	8	66	3,419	3,041	194	44	6,698	...	847
	Total ...	...	...	226	66	60,083	66,134	51	3	135,271	6,906	569
	Total ...	...	...	234	66	72,502	69,175	245	47	141,969	6,905	579
Tirhut Division.												
16	Saran ... Licensed ...	2,337,392	878	67	65	46,531	38,088	12	9	84,960	16,565	1,021
17	Champaran ...	1,732,037	497	47	47	28,076	29,313	271	67	58,227	14,729	926
18	Muzaffarnur ...	2,008,675	895	58	58	51,138	46,825	19	6	97,988	25,496	1,259
19	Darbhanga ...	2,800,219	846	60	60	41,175	39,486	66	56	80,783	18,619	1,045
	Total of Tirhut Division ... Licensed ...	9,566,723	768	232	236	167,740	153,712	368	138	321,958	75,969	1,065
Bhagalpur Division.												
20	Monghyr ... Licensed ...	2,013,966	515	41	38	46,804	40,107	...	...	86,911	20,682	1,469
21	Bhagalpur ...	2,007,455	476	61	45	35,387	34,573	11	7	69,978	13,008	970
22	Purnea ...	1,844,944	370	51	51	31,029	29,883	1,571	356	63,439	11,235	1,027
23	Darjeeling ... { Paid by District Board } Darjeeling Bovine Vaccination Depot—Paid by Government.	227,734	197	(b) 12	...	6,190	6,170	917	829	14,106	...	1,196
	...	...	...	2	...	35	48	...	...	83	...	...
24	Sonthal Parganas ... Licensed ...	1,781,442	325	74	19	32,698	31,335	2,864	286	67,283	2,907	871
	Total of Bhagalpur Division { Paid by District Board, Paid by Govern- ment, Licensed ... }	7,874,631	309	12	...	6,190	6,170	917	829	14,106	...	1,196
	Total ...	...	...	2	...	35	48	...	...	83	...	...
	Total ...	...	...	226	153	140,518	135,896	4,446	749	281,611	47,892	1,041
	Total ...	...	...	240	153	146,743	142,116	5,363	1,578	295,809	47,892	1,040
Orissa Division.												
25	Cuttack ... { Paid by District Board, Licensed ... }	1,984,038	548	4	...	6,004	5,425	546	417	12,392	...	3,142
	...	...	...	62	54	63,526	58,332	193	206	122,357	7,405	1,800
26	Balasore ...	1,030,317	511	44	...	27,927	24,915	2,882	1,586	56,408	...	1,382
27	Angul ...	191,911	114	14	1	3,178	3,015	2,229	1,791	10,204	258	710
28	Puri ... { Paid by District Board ... }	967,660	392	28	...	28,157	23,777	261	111	52,306	...	1,868
29	Sambalpur ...	626,092	212	9	1	13,306	13,168	2,632	4,387	32,913	...	3,325
	Total of Orissa Division { Paid by District Board, Licensed ... }	4,820,308	326	41	1	47,467	42,370	2,839	4,915	97,611	...	2,394
	Total ...	...	...	127	55	94,631	85,360	5,295	3,583	188,869	7,663	1,514
	Total ...	...	...	161	56	142,098	127,730	8,154	8,498	296,480	7,663	1,735

(a) In Birbhum one of these vaccinators

(b) In Darjeeling three temporary vacce

districts of Bengal during the year 1910-11.

NUMBER OF CASES PRIMARILY VACCINATED.					NUMBER OF CASES RE-VACCINATED.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		Persons successfully vaccinated per 1,000 of population.	PERCENTAGE OF UNKNOWN CASES TO TOTAL CASES.		AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED DURING THE PREVIOUS FIVE YEARS.		AVERAGE ANNUAL NUMBER OF DEATHS FROM SMALL-POX DURING THE PREVIOUS FIVE YEARS.	
Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000 of population.	Number.	Ratio per 1,000 of population.
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
51,772	24,233	23,128	50,702	4	1,590	1,654	21	98.05	67.17	35.84	0.07	1.32	50,507	34.93	925	0.03
125	34	52	125	...	2	1	1	100	100	34.93	...	50.00	32,208	30.11	460	0.04
30,505	10,584	15,953	39,257	11	1,337	895	...	98.96	65.95	34.98	0.03	...	40,617	38.20	298	0.03
39,780	17,119	20,192	39,785	...	9,038	4,896	...	99.88	53.17	41.89	...	...	127,012	47.05	1,342	0.40
131,153	50,309	60,781	126,831	169	17,212	8,270	232	98.82	48.73	50.05	0.12	1.34	22,887	32.57	648	0.07
31,464	14,204	13,547	31,410	25	3,124	2,076	37	99.90	67.24	36.59	0.07	1.18	22,835	33.02	734	0.07
20,727	10,509	9,334	20,661	4	192	113	8	99.70	61.41	30.56	0.01	4.16	...	...	...	...
125	34	52	125	...	2	1	1	100	100	41.13	...	50.00	303,006	30.37	4,456	0.57
305,461	127,709	142,935	290,636	213	32,513	17,220	298	98.16	53.45	...	0.06	0.91	...	...	...	...
305,556	127,743	142,987	290,761	213	32,515	17,221	299	98.16	53.45	...	0.06	0.91	...	...	...	...
62,873	28,706	30,396	62,240	1	715	256	...	98.99	35.80	37.19	0.01	...	62,039	36.92	1,092	0.04
22,457	5,031	15,267	21,093	561	5,441	1,564	830	96.33	34.06	26.72	2.49	15.62	36,091	42.57	1,754	0.06
55,269	34,357	20,155	54,986	97	155	103	1	99.66	66.88	35.24	0.17	0.64	60,396	38.51	175	0.01
47,293	32,135	13,569	46,240	492	291	172	22	98.07	63.94	37.15	0.91	7.86	40,929	36.76	569	0.05
70,785	29,970	36,844	70,271	43	4,916	2,648	13	99.33	54.00	40.69	0.06	0.26	61,334	35.90	197	0.01
44,878	15,697	23,188	43,935	15	784	324	...	97.92	41.32	33.63	0.02	...	39,739	32.39	69	0.05
22,457	5,031	15,267	21,093	561	5,441	1,564	830	96.33	34.06	30.34	2.49	15.62	308,338	30.88	3,856	0.46
281,100	140,085	124,082	277,672	586	6,861	3,563	96	98.98	51.32	...	0.29	0.82	...	...	...	...
303,557	145,956	129,569	298,765	1,147	12,362	5,067	886	98.79	44.38	...	0.37	7.20	...	...	...	...
30,389	14,850	23,084	38,998	139	47	7	...	99.35	14.80	27.79	0.35	...	42,990	30.63	2,014	1.43
6,540	3,872	2,307	6,435	2	238	204	5	98.42	87.55	33.20	0.03	2.10	68,716	34.83	2,145	1.08
59,588	30,707	26,975	58,856	83	5	4	...	98.90	80.00	19.59	0.13	...	47,665	25.84	1,301	0.70
30,672	17,483	17,079	36,137	128	2	2	...	98.88	100	...	0.34	...	...	...	...	...
6,540	3,872	2,307	6,435	2	238	204	5	98.42	87.55	...	0.03	2.10	...	...	...	...
135,649	63,940	67,138	133,991	349	54	13	...	99.03	24.07	26.94	0.25	...	119,371	30.33	5,400	1.04
142,189	66,912	69,445	140,426	351	292	217	5	99.00	75.60	...	0.24	1.71	...	...	...	...
84,939	45,527	36,721	83,768	700	21	30	...	99.44	95.23	35.84	0.82	...	70,663	30.23	1,086	0.46
87,898	33,456	23,637	57,487	249	338	302	3	99.71	96.14	32.98	0.43	0.88	52,768	30.11	629	0.35
97,963	61,079	36,330	97,645	3	25	17	...	99.67	68.00	36.60	0.03	...	95,433	33.76	390	0.10
51,198	56,806	23,586	80,415	8	122	107	...	99.94	87.79	28.05	0.09	...	79,494	28.29	413	0.14
321,998	190,859	129,274	319,318	940	506	446	3	99.46	83.06	33.42	0.29	0.59	298,358	31.18	2,518	0.26
80,911	43,712	35,096	80,875	5	...	18	...	99.96	...	40.15	0.06	...	77,140	38.30	1,001	0.49
71,214	48,269	22,310	70,617	14	1,927	703	50	99.59	37.45	33.73	0.03	2.59	72,896	30.31	1,121	0.55
61,776	38,115	23,923	61,594	83	1,746	1,382	40	100	81.99	61.43	0.65	2.29	55,900	30.31	503	0.32
12,600	4,971	4,237	12,524	83	...	...	...	100	...	...	...	...	16,654	73.13	17	0.07
64,133	41,408	20,886	63,545	89	3,259	1,797	...	99.22	55.29	36.67	0.13	...	62,618	33.15	841	0.47
12,600	4,971	4,237	12,526	83	1,746	1,382	40	100	81.99	...	0.65	2.29	...	...	...	...
83	31	36	83	...	...	...	...	100	...	37.21	...	...	285,225	30.22	3,573	0.45
278,034	171,564	101,827	276,543	127	5,195	2,318	50	99.50	48.94	...	0.04	0.96	...	...	...	...
290,726	170,566	106,100	289,123	210	6,941	3,060	90	99.53	50.92	...	0.07	1.39	...	...	...	...
11,696	4,118	4,452	11,358	32	963	322	61	98.13	32.09	...	0.27	6.33	94,671	47.71	365	0.18
122,333	46,037	56,179	121,378	443	399	208	14	99.27	54.02	...	0.36	3.50	...	...	...	...
51,940	21,961	23,821	51,751	67	4,468	3,535	39	99.76	79.81	52.63	0.12	0.87	34,813	33.14	777	0.73
6,193	3,736	1,805	5,735	233	4,011	3,018	70	96.22	91.80	48.73	3.76	1.74	8,767	45.68	Not under registration.	...
51,364	13,001	27,517	51,153	207	372	307	4	98.89	83.42	53.16	0.39	1.07	46,881	48.40	2,171	0.24
26,844	12,865	6,924	26,505	113	6,439	6,140	141	99.15	97.57	52.14	0.42	2.19	25,614	40.92	46	0.07
20,284	37,584	34,493	59,016	352	7,774	6,774	106	98.87	89.50	...	0.38	2.64	...	...	...	...
180,406	70,734	80,805	178,864	743	8,578	7,361	123	99.22	84.07	...	0.41	1.38	210,726	43.71	3,359	0.69
270,850	108,318	119,318	267,880	1,095	16,652	14,138	329	99.39	80.50	...	0.40	1.97	...	...	...	...

worked during the recess and was paid by the District Board.
nators were also employed.

STATEMENT No. I—Showing particulars of Vaccination in the

No.	DISTRICT.	Population.	Average population per square mile.	AVERAGE NUMBER OF VACCINATORS EMPLOYED THROUGHOUT THE YEAR.		TOTAL NUMBER OF PERSONS VACCINATED (INCLUDING THOSE VACCINATED BY APPRENTICES).								Average number of cases vaccinated by each vaccinator, i.e., excluding those done by apprentices.
				a	b	a		b		c	d			
						Primary.	Re-vaccination.	Total.						
									Males.			Females.	Males.		Females.
1	2	3	4	5	6									
Chota Nagpur Division.														
29	Hazaribagh Licensed	1,142,130	163	38	18	24,488	22,644	913	452	48,497	1,660	1,243		
31	Ranchi	1,157,992	162	44	43	27,696	25,997	1,961	334	55,588	13,694	947		
32	Palamau { Paid by District Board. Licensed ... }	613,763	124	(c) 26	9	95	49	935	375	1,454	...	806		
33	Manbhum	1,275,025	368	43	19	29,025	27,602	963	563	58,692	2,605	1,317		
34	Singbhum	604,926	161	16	7	13,257	11,591	1,241	722	26,811	1,381	1,549		
35	Political States of Singbhum	141,079	242	4	3	2,480	2,400	3	1	4,974	649	1,081		
Total of Chota Nagpur Division. { Paid by District Board. Licensed ... }		4,934,915	176	...	...	95	49	935	375	1,454	...	...
Total ... }				171	99	106,730	99,679	5,294	2,806	213,709	19,908	1,139		
Total ... }				171	99	106,825	99,719	6,239	2,471	215,244	19,998	1,148		
Total for the Province { Paid by District Board. Paid by Government. Licensed ... }		48,472,267	434	61	1	57,241	51,685	4,907	6,163	119,506	...	1,981		
Total ... }				49	...	12,518	10,022	4,096	1,345	27,981	...	690		
Total ... }				1,516	769	876,798	819,602	38,096	23,247	1,757,743	186,974	1,045		
Total ... }				1,617	770	946,527	881,309	47,099	30,755	1,905,726	186,074	1,072		

(c) In Palamau four of these vaccinators worked during the

OFFICE OF THE SANY. COMM. FOR BENGAL;

The 9th June 1911.

districts of Bengal during the year 1910-11—concluded.

NUMBER OF CASES PRIMARILY VACCINATED.					NUMBER OF CASES RE-VACCINATED.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		Persons successfully vaccinated per 1,000 of population.	PERCENTAGE OF UNKNOWN CASES TO TOTAL CASES.		AVERAGE ANNUAL NUMBER OF PERSONS SUCCESSFULLY VACCINATED DURING THE PREVIOUS FIVE YEARS.		AVERAGE ANNUAL NUMBER OF DEATH FROM SMALL-POX DURING THE PREVIOUS FIVE YEARS.	
Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000 of population.	Number.	Ratio per 1,000 of population.
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
47,530	30,833	15,565	47,037	33	1,328	1,307	...	99.03	95.54	42.32	.06	...	43,047	37.69	439	.38
53,093	42,711	10,101	53,032	31	2,295	2,054	49	99.94	91.45	47.57	.05	2.13	45,295	39.11	589	.50
144	50	16	110	34	1,310	1,068	114	100	89.29	33.17	23.61	8.70	21,501	34.50	347	.56
10,208	10,315	2,406	18,913	182	208	272	7	99.40	93.47	...	.94	2.34	...	...	...	...
57,761	31,911	24,974	57,451	52	1,485	1,113	36	99.35	76.81	45.93	.09	2.42	36,576	44.37	273	.21
24,848	15,982	8,561	24,747	41	1,903	1,414	147	99.75	77.86	43.24	.16	7.48	19,922	32.03	99	.14
4,970	2,543	2,772	4,956	1	4	...	4	99.73	...	33.12	.02	100	3,980	28.21	...	...
144	50	16	110	34	1,310	1,068	114	100	89.29	...	23.61	8.70	...	...	...	...
207,410	140,295	63,847	205,136	340	7,413	6,160	243	99.54	83.91	43.25	.16	3.27	190,181	38.53	1,738	.35
207,554	140,345	63,803	205,246	374	8,723	7,228	337	99.54	86.39	...	.18	4.09	...	...	...	...
109,802	46,311	44,105	108,212	471	11,070	9,429	366	98.97	88.08	...	.42	3.30	...	...	...	...
22,540	5,662	15,603	21,176	561	5,441	1,564	850	96.34	31.95	38.57	2.48	15.62	1,755,263	36.21	24,909	.31
1,716,118	911,136	706,918	1,692,160	3,318	61,426	37,221	753	99.14	61.35	...	.19	1.22	...	...	...	...
1,842,460	902,089	761,626	1,821,548	4,350	77,931	48,214	1,969	99.09	63.47	...	.23	2.32	...	...	...	...

recess and were paid by the District Board.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,

Sanitary Commissioner for Bengal.

STATEMENT No. 11—Showing the cost of Vaccination in the

No.	CIRCLE AND DISTRICT.	EXPENSE												
		European supervising officers.	Pay.	Native supervising officers.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Chiefs.	Pay.	Peons, &c.	Pay.	Total pay of establishment.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	<i>Burdwan Division.</i>		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.	
1	Burdwan	...	...	5	1,885 5 4	...	...	32	129 0 0	...	...	...	...	2,022 5 4
2	Birbhum	...	...	3	1,200 0 0	...	...	32	64 8 0	...	...	...	...	1,264 8 0
3	Bankura	...	...	3	1,050 0 0	...	...	33	327 8 0	...	...	...	...	1,407 8 0
4	Midnapore	...	...	7	2,500 0 0	...	...	105	108 8 0	...	...	...	...	2,608 8 0
5	Hugbly	...	...	4	1,500 0 0	...	...	38	21 12 0	...	...	...	...	1,521 12 0
6	Howrah	...	...	3	1,140 0 0	...	...	24	57 0 0	...	...	...	...	1,197 0 0
	Total of the Burdwan Division	...	...	25	9,375 5 4	...	...	284	708 4 0	...	...	...	...	10,083 9 4
	<i>Presidency Division.</i>													
7	24-Pargannas	...	...	7	2,583 4 4	...	...	64	...	...	...	...	...	2,583 4 4
8	Calcutta Animal Vaccination Depot (for manufacturing lymph).	...	...	1	2,400 0 0	4	1,205 5 3	...	...	1	242 0 0	19	1,596 4 6	5,443 9 9
9	Calcutta	...	...	7	5,725 7 3	38	10,530 11 10	...	...	...	...	18	1,513 0 6	17,779 3 7
10	Nadua	...	...	6	1,965 7 4	...	...	50	...	...	...	...	...	1,965 7 4
11	Murshidabad	...	...	5	1,875 8 0	...	...	45	40 14 0	...	...	...	...	1,914 6 0
12	Jessore	...	...	6	2,055 0 0	...	...	62	52 0 0	...	...	...	...	2,117 0 0
13	Khulna	...	...	4	1,710 13 8	...	...	35	...	...	...	...	...	1,710 13 8
	Total of the Presidency Division	...	...	36	18,324 8 4	42	11,745 1 1	257	132 14 0	1	242 0 0	34	3,109 5 0	33,542 12 5
	<i>Patna Division.</i>													
13	Patna	...	...	5	1,778 3 7	...	...	68	22 12 0	...	...	...	...	1,800 15 7
14	Gaya	...	...	5	1,805 10 8	8	593 0 0	65	11 12 0	...	...	...	...	2,471 6 8
15	Shahabad	...	...	5	1,980 0 0	...	...	93	...	...	...	...	...	1,980 0 0
	Total of the Patna Division	...	...	15	5,624 14 3	8	593 0 0	226	34 8 0	...	...	...	...	6,252 6 3
	<i>Tirhut Division.</i>													
16	Saran	...	...	4	1,440 0 0	...	...	67	50 4 0	...	...	...	...	1,490 4 0
17	Champaran	...	...	3	1,680 0 0	...	...	47	203 12 0	...	...	...	...	1,283 12 0
18	Munshiganj	...	...	4	1,425 12 3	...	...	58	26 0 0	...	...	...	...	1,451 12 3
19	Darbhanga	...	...	4	1,482 5 2	...	...	60	30 0 0	...	...	...	...	1,572 5 2
	Total of the Tirhut Division	...	...	15	5,428 1 5	...	...	232	370 0 0	...	...	...	...	5,798 1 5
	<i>Bhagalpur Division.</i>													
20	Monghyr	...	...	4	1,500 0 0	...	...	41	34 8 0	...	...	...	...	1,534 8 0
21	Bhagalpur	...	...	5	1,595 3 1	...	...	60	135 8 0	...	...	...	...	1,750 11 1
22	Purnea	...	...	4	1,636 12 7	...	...	51	81 8 0	...	...	...	...	1,718 4 8
23	Darjeeling Animal Vaccination Depot (for manufacturing lymph).	...	...	1	975 0 0	2	400 0 0	...	...	...	...	7	484 0 0	1,859 0 0
24	Darjeeling	...	...	3	1,310 3 10	(b) 10	1,106 3 0	...	...	...	...	...	...	2,506 6 10
	Sonthal Pargannas	...	...	7	2,039 13 0	...	...	74	...	...	...	...	...	2,639 13 0
	Total of the Bhagalpur Division	...	...	24	9,677 0 7	13	1,596 3 0	226	271 8 0	...	...	7	484 0 0	12,028 11 7
	<i>Orissa Division.</i>													
25	Cuttack	...	...	(a) 5	1,673 12 0	4	480 0 0	62	...	...	...	...	...	2,153 12 0
26	Balasore	...	...	3	1,199 9 6	...	...	44	...	...	...	...	...	1,199 9 6
27	Angul	...	...	3	2,309 0 0	...	...	14	96 1 0	...	...	...	...	2,305 1 0
28	Puri	...	...	3	1,313 5 4	25	5,592 13 11	...	...	...	...	...	...	4,906 3 3
29	Sambalpur	...	...	2	840 0 0	(c) 10	1,203 0 0	...	...	...	...	2	50 0 0	2,183 0 0
	Total of the Orissa Division	...	...	16	7,235 10 10	42	8,365 13 11	120	26 1 0	...	...	2	50 0 0	12,747 9 9
	<i>Chota Nagpur Division.</i>													
30	Hazaribagh	...	...	4	1,500 5 8	...	...	38	...	...	...	...	...	1,500 5 8
31	Ranchi	...	...	4	1,380 0 0	...	...	44	52 8 0	...	...	...	...	1,432 8 0
32	Palawan	...	...	2	932 7 8	...	...	26	70 6 5	...	...	...	...	1,002 14 1
33	Manikpur	...	...	3	1,227 11 10	...	...	43	33 12 0	...	...	...	...	1,261 7 10
34	Serubbhum	...	...	2	876 10 0	...	...	16	46 12 0	...	...	...	...	922 6 0
	Political States of Singhbhum.	...	...	1	300 0 0	...	...	4	...	...	...	...	...	300 0 0
	Total of the Chota-Nagpur Division	...	...	16	6,307 8 2	...	...	171	203 6 5	...	...	...	...	6,510 9 7
	Total of Vaccination Circles	...	...	147	61,970 11 11	104	19,300 2 0	1,516	1,806 9 5*	1	242 0 0	43	3,643 5 0	86,902 12 4
	Establishment of the Deputy Sanitary Commissioners—													
	Bengal and Orissa Circle	...	...	...	...	...	...	...	...	2	960 0 0	2	120 0 0	1,080 0 0
	Bihar and Chota Nagpur Circle	1	10,467 8 0	...	...	...	...	...	...	2	1,011 14 4	2	168 0 0	11,647 6 4
	Total	1	10,467 8 0	...	...	...	...	...	...	4	1,971 14 4	4	288 0 0	12,727 6 4
	Total for the Province	1	10,467 8 0	147	61,970 11 11	104	19,300 2 0	1,516	1,806 9 5*	5	2,213 14 4	47	3,931 5 0	99,690 2 8
	Municipalities	...	...	8	3,206 12 7	173	16,488 2 10	...	...	1	16 0 0	11	479 5 5	20,244 4 10
	Railway Vaccinations	...	...	not furnished.	...	...	...	not furnished.	...	...	...	...	...	...
	GRAND TOTAL	1	10,467 8 0	155	65,237 8 6	277	35,788 4 10	1,516	1,806 9 5	6	2,223 14 4	58	4,410 10 5	1,19,934 7 6

(a) Includes one Special Inspector of Vaccination who
 (b) Ditto one head or Supervising Vaccinator
 (c) Ditto one paid apprentice Vaccinator in
 * Deputation allowance paid to licensed Vaccinators
 † This includes Rs. 1,539-4 spent by the Civil Surgeons

district of Bengal during the year 1910-11.

EXPENDITURE.				PAID FROM—						Number of all successful vaccinations and re-vaccinations.	Average cost of each successful case.
Travelling allowance.	Contingencies.		Total cost.	Imperial fund.	Provincial fund.	Local fund.	Municipalities.	Native States.	Total.		
Rs. A. P.	Cost of lymph.	Other contingencies.	Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.		Rs. A. P.
16	17	18	19	20	21	22	23	24	25	26	27
1,067 15 0	...	183 4 0	3,273 8 4	...	3,273 8 4	...	...	...	3,273 8 4	51,816	0 1 0
890 8 9	...	176 9 0	2,637 9 9	...	2,637 9 9	30 0 0	...	...	2,637 9 9	31,258	0 1 0
809 13 6	...	188 15 6	2,466 5 0	...	2,466 5 0	200 0 0	...	...	2,466 5 0	44,541	0 0 10
1,028 10 0	112 8 0	473 2 0	4,952 12 0	...	4,641 12 0	311 0 0	...	...	4,952 12 0	135,107	0 0 7
1,034 0 9	29 3 0	142 7 6	2,727 7 3	...	2,698 4 3	29 3 0	...	...	2,727 7 3	53,456	0 1 3
509 0 6	...	118 11 0	1,914 11 6	...	1,914 11 6	...	...	...	1,914 11 6	20,774	0 1 5
5,896 0 6	141 11 0	1,253 1 0	17,372 5 10	...	16,802 2 10	570 3 0	...	...	17,372 5 10	316,982	...
2,500 6 0	...	189 7 0	5,273 1 4	...	5,273 1 4	...	...	...	5,273 1 4	62,496	0 1 4
...	...	15,630 0 3	20,473 10 0	...	20,473 10 0	...	...	...	20,473 10 0	...	...
144 10 3	4,393 9 3	648 3 9	22,965 10 10	...	...	...	22,965 10 10	...	22,965 10 10	22,657	1 2 0
1,716 5 6	...	192 1 0	3,873 13 10	...	3,873 13 10	...	...	...	3,873 13 10	55,989	0 1 1
1,000 0 0	...	231 0 0	3,146 6 0	...	3,146 6 0	...	...	...	3,146 6 0	46,412	0 1 1
1,194 5 6	...	241 8 8	3,582 14 2	...	3,582 14 2	...	...	...	3,582 14 2	72,919	0 0 9
997 7 6	...	168 0 0	2,876 4 11	...	2,876 4 11	...	...	...	2,876 4 11	44,259	0 1 0
7,553 2 9	4,393 9 3	16,700 4 8	62,190 13 1	...	39,325 2 3	...	22,965 10 10	...	62,190 13 1	203,832	...
1,084 5 9	...	167 12 0	3,053 1 4	...	3,053 1 4	...	...	...	3,053 1 4	39,005	0 1 3
1,078 2 6	...	318 6 6	3,867 15 8	...	3,251 3 8	616 12 0	...	...	3,867 15 8	65,499	0 0 11
979 2 6	...	379 7 0	3,338 9 6	...	3,338 9 6	100 0 0	...	...	3,338 9 6	56,139	0 1 8
3,141 10 9	...	865 9 6	10,250 10 6	...	9,542 14 6	716 12 0	...	...	10,250 10 6	140,643	...
834 7 0	...	203 0 0	2,027 11 0	...	2,477 7 0	50 4 0	...	...	2,527 11 0	83,788	0 0 5
749 7 0	...	261 3 6	2,294 6 6	...	2,294 6 6	...	...	...	2,294 6 6	57,789	0 0 7
609 4 6	...	179 1 9	2,330 2 6	...	2,330 2 6	...	...	...	2,330 2 6	97,092	0 0 4
950 0 0	...	235 0 0	2,757 5 2	...	2,757 5 2	...	...	...	2,757 5 2	80,525	0 0 6
3,233 2 6	...	878 5 3	9,909 9 2	...	9,889 5 2	50 4 0	...	...	9,909 9 2	319,764	...
943 3 9	...	181 5 6	2,699 1 3	...	2,699 1 3	...	...	...	2,699 1 3	80,875	0 0 6
830 0 0	...	226 8 0	2,827 3 1	...	2,827 3 1	...	...	...	2,827 3 1	70,635	0 0 7
949 15 6	...	154 0 0	2,822 4 2	...	2,822 4 2	...	...	...	2,822 4 2	62,369	0 0 8
480 8 0	...	693 2 0	3,034 10 0	...	3,034 10 0	...	...	...	3,034 10 0	83	...
3,022 13 0	...	115 9 6	5,644 13 4	...	3,272 8 4	2,372 5 0	...	...	5,644 13 4	13,908	0 6 6
1,646 15 0	...	191 12 0	4,498 8 0	...	4,498 8 0	...	...	...	4,498 8 0	65,342	0 1 1
7,933 7 3	...	1,542 5 0	21,524 7 10	...	19,152 2 10	2,372 5 0	...	...	21,524 7 10	293,602	...
864 7 0	...	176 0 0	3,194 3 0	...	2,694 3 0	500 0 0	...	...	3,194 3 0	133,201	0 0 4
1,306 11 6	...	164 0 0	2,760 5 0	...	2,760 5 0	...	...	...	2,760 5 0	55,286	0 0 9
1,090 11 0	...	72 6 0	3,468 2 0	...	3,468 2 0	...	...	...	3,468 2 0	9,333	0 5 11
950 0 0	...	150 0 0	6,006 3 3	...	2,413 5 4	3,602 13 11	...	...	6,006 3 3	51,460	0 1 10
163 13 0	...	116 7 6	2,463 4 6	...	1,120 4 6	1,343 0 0	...	...	2,463 4 6	32,650	0 1 2
4,465 10 6	...	678 13 6	17,892 1 9	...	12,456 3 10	5,435 13 11	...	...	17,892 1 9	292,015	...
907 1 6	...	143 0 0	2,640 7 2	...	2,640 7 2	...	...	...	2,640 7 2	48,344	0 0 10
1,290 14 6	...	147 0 0	2,879 6 6	...	2,879 6 6	...	...	...	2,879 6 6	55,096	0 0 10
563 11 9	...	110 0 0	1,616 9 7	...	1,546 3 2	79 6 5	...	...	1,616 9 7	20,363	0 1 3
944 14 6	...	90 0 0	2,301 6 7	...	2,301 6 7	...	...	...	2,301 6 7	58,864	0 0 7
557 6 0	...	151 3 0	2,323 12 6	...	2,106 1 11	...	...	167 10 7	2,323 12 6	26,161	0 1 2
391 13 9	4,966	...	...
4,609 13 9	...	641 3 0	11,761 10 4	...	11,023 9 4	70 6 5	...	167 10 7	11,761 10 4	213,474	...
36,833 0 0	4,535 4 3	22,579 9 11	1,50,910 10 6	...	1,18,561 8 9	9,215 12 4	22,965 10 10	167 10 7	1,50,910 10 6	1,869,792	0 1 3
...	...	649 15 0	1,729 15 0	...	1,729 15 0	...	...	...	1,729 15 0	...	...
3,584 2 0	...	863 8 3	15,795 0 7	...	15,795 0 7	...	...	...	15,795 0 7	...	...
3,584 2 0	...	1,213 7 3	17,324 15 7	...	17,324 15 7	...	...	...	17,324 15 7	...	...
40,417 2 0	4,535 4 3	23,793 1 2	1,08,435 10 1	...	1,36,056 8 4	9,215 12 4	22,965 10 10	167 10 7	1,08,435 10 1	1,869,792	0 1 5
...	119 6 0	2,187 12 11	22,501 7 9	...	1,376 12 7	238 6 2	20,706 5 0	120 0 0	22,501 7 9	77,477	0 3 8
40,417 2 0	4,654 10 3	25,709 14 1	1,20,537 1 10	...	1,37,463 4 11	9,454 2 6	43,731 15 10	287 10 7	1,20,537 1 10	1,968,305	0 1 6

worked in the Cuttack and Puri districts up to 9th September 1910.
 In the Darjeeling district,
 employed on small-pox duty during recess,
 on account of antiseptic vaccination and Rs. 1,339 paid as rewards to Vaccinators for good work.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,
 Sanitary Commissioner for Bengal.

STATEMENT No. III—Showing particulars of Vaccination performed by Vaccinators attached to Municipalities, Dispensaries, etc., in the Province of Bengal during the year 1910-11.

Districts.	Number of municipalities, dispensaries, etc., in each district to which a vaccinator is attached.	Average number of vaccinators attached to municipalities, dispensaries, etc., during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	NUMBER OF CASES PRIMARILY VACCINATED.					NUMBER OF CASES REVACCINATED.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH THE RESULTS WERE KNOWN.		PERCENTAGE OF UNKNOWN CASES TO TOTAL CASES.	
					Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Revaccination.	Primary.	Revaccination.
						Under one year.	One year and under six years.	Total of all ages.								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Burdwan	6	6	4,538	506	4,077	1,552	1,907	3,867	10	952	481	54	95.08	53.56	.94	5.67
Birbhum	1	1	865	865	283	191	81	275	5	582	389	87	100	78.28	1.76	14.94
Bankura	2	2	2,617	872	1,383	559	664	1,274	...	1,342	342	39	99.29	26.94	...	2.90
Midnapore	8	8	7,156	892	3,750	1,513	1,840	3,658	19	3,473	1,285	749	99.04	47.17	.50	21.56
Hooghly	4	4	4,001	444	3,189	1,592	1,293	3,166	17	938	487	17	99.81	51.75	.53	1.77
Howrah	7	7	4,718	674	4,028	2,342	2,192	4,899	13	95	31	...	99.65	32.63	...	...
24 Parganas	32	32	15,425	482	15,015	6,687	7,759	14,778	26	617	291	...	98.29	32.57	.18	...
Nadia	9	9	3,491	388	2,787	1,547	1,038	2,760	1	704	392	20	99.06	57.30	.03	2.84
Murshidabad	6	6	3,318	474	2,458	1,405	1,059	2,663	57	460	182	32	95.07	42.52	1.99	6.95
Jessore	3	3	1,423	474	459	295	198	458	...	964	427	...	99.78	44.29	...	...
Khulna	3	3	923	307	698	279	349	672	5	243	75	73	96.16	44.11	...	7.71
Patna	11	11	7,376	670	6,378	3,269	2,995	6,181	173	1,003	529	82	98.90	57.43	2.71	8.17
Gaya	5	5	2,851	579	2,585	1,468	831	2,402	153	281	253	1	98.76	90.35	5.91	.55
Shahabad	6	6	4,591	590	3,388	1,977	1,052	3,219	61	1,164	533	164	96.75	53.30	1.80	14.08
Saran	5	5	3,378	675	2,884	2,036	583	2,719	169	494	243	136	97.61	67.87	3.77	27.43
Chuarparan	3	3	2,445	815	1,650	1,116	287	1,577	31	795	521	107	97.40	75.72	1.87	13.46
Muzaffarpur	4	4	4,143	690	3,244	2,294	868	3,194	3	899	539	21	98.54	61.38	.69	2.33
Darbhanga	5	5	3,642	465	2,865	1,830	974	2,809	16	786	691	18	98.19	89.97	.55	2.29
Monghyr	2	2	4,707	1,189	4,233	2,359	1,719	4,237	6	524	395	45	100	82.46	.14	8.58
Bhagalpur	2	2	5,066	1,566	2,236	875	1,197	2,142	25	2,840	1,661	139	97.31	61.49	1.12	4.89
Purnea	3	3	1,397	436	1,667	483	561	1,089	2	215	69	...	99.45	32.69	.18	...
Darjeeling	2	2	1,675	837	668	413	125	637	39	1,097	478	191	99.84	58.57	4.49	18.95
South Parganas	4	4	2,708	677	1,730	833	739	1,643	41	988	461	58	97.85	49.57	2.58	9.87
Cuttack	4	4	7,674	1,982	6,128	3,491	1,922	5,094	516	1,432	617	421	99.85	59.84	8.42	28.69
Balasore	1	1	847	847	564	194	230	551	3	284	215	19	99.29	81.15	.53	6.69
Puri	1	1	2,335	2,335	1,639	396	834	1,582	13	765	696	12	97.83	92.43	.79	1.66
Sambalpur	1	1	893	893	434	232	179	429	1	459	320	60	99.97	89.29	.23	13.67
Hazaribagh	3	3	2,206	735	1,365	785	490	1,289	6	903	442	...	99.23	49.94	.45	...
Ranchi	2	2	2,675	892	2,090	1,190	785	2,079	4	585	376	2	99.66	64.49	.19	.34
Palamu	1	1	785	785	535	247	110	475	49	250	221	...	97.73	88.40	9.15	...
Manbhum	3	3	1,927	642	883	490	367	856	9	1,059	666	54	97.04	64.91	1.02	5.00
Singbhum	1	1	589	589	358	214	84	367	37	231	125	14	95.63	57.60	10.33	6.06
Total	134	173	112,495	650	85,891	43,917	35,163	83,125	1,441	27,395	14,342	2,615	98.38	57.82	1.71	9.46
Vaccination performed by Railway staff.	...	...	1,453*	...	871	313	476	771	85	582	393	...	...	...	...	...
GRAND TOTAL	134	173	113,948	658	86,762	44,130	35,579	83,896	1,487	27,977	14,647	2,647	...	...	...	...

* These operations were performed by the Railway Medical staff.

OFFICE OF THE SANY. COMM. FOR BENGAL, }
The 9th June 1911.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,

Sanitary Commissioner for Bengal.

COMPARATIVE STATEMENT No. IV.

1901-02		1902-03		1903-04		1904-05		1905-06		1906-07		1907-08		1908-09		1909-10		1910-11		1911-12		1912-13		1913-14		1914-15		1915-16		1916-17		1917-18		1918-19		1919-20		1920-21		1921-22		1922-23		1923-24		1924-25		1925-26		1926-27		1927-28		1928-29		1929-30		1930-31		1931-32		1932-33		1933-34		1934-35		1935-36		1936-37		1937-38		1938-39		1939-40		1940-41		1941-42		1942-43		1943-44		1944-45		1945-46		1946-47		1947-48		1948-49		1949-50		1950-51		1951-52		1952-53		1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60		1960-61		1961-62		1962-63		1963-64		1964-65		1965-66		1966-67		1967-68		1968-69		1969-70		1970-71		1971-72		1972-73		1973-74		1974-75		1975-76		1976-77		1977-78		1978-79		1979-80		1980-81		1981-82		1982-83		1983-84		1984-85		1985-86		1986-87		1987-88		1988-89		1989-90		1990-91		1991-92		1992-93		1993-94		1994-95		1995-96		1996-97		1997-98		1998-99		1999-00		2000-01		2001-02		2002-03		2003-04		2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12		2012-13		2013-14		2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23		2023-24		2024-25		2025-26		2026-27		2027-28		2028-29		2029-30		2030-31		2031-32		2032-33		2033-34		2034-35		2035-36		2036-37		2037-38		2038-39		2039-40		2040-41		2041-42		2042-43		2043-44		2044-45		2045-46		2046-47		2047-48		2048-49		2049-50		2050-51		2051-52		2052-53		2053-54		2054-55		2055-56		2056-57		2057-58		2058-59		2059-60		2060-61		2061-62		2062-63		2063-64		2064-65		2065-66		2066-67		2067-68		2068-69		2069-70		2070-71		2071-72		2072-73		2073-74		2074-75		2075-76		2076-77		2077-78		2078-79		2079-80		2080-81		2081-82		2082-83		2083-84		2084-85		2085-86		2086-87		2087-88		2088-89		2089-90		2090-91		2091-92		2092-93		2093-94		2094-95		2095-96		2096-97		2097-98		2098-99		2099-00		2100-01		2101-02		2102-03		2103-04		2104-05		2105-06		2106-07		2107-08		2108-09		2109-10		2110-11		2111-12		2112-13		2113-14		2114-15		2115-16		2116-17		2117-18		2118-19		2119-20		2120-21		2121-22		2122-23		2123-24		2124-25		2125-26		2126-27		2127-28		2128-29		2129-30		2130-31		2131-32		2132-33		2133-34		2134-35		2135-36		2136-37		2137-38		2138-39		2139-40		2140-41		2141-42		2142-43		2143-44		2144-45		2145-46		2146-47		2147-48		2148-49		2149-50		2150-51		2151-52		2152-53		2153-54		2154-55		2155-56		2156-57		2157-58		2158-59		2159-60		2160-61		2161-62		2162-63		2163-64		2164-65		2165-66		2166-67		2167-68		2168-69		2169-70		2170-71		2171-72		2172-73		2173-74		2174-75		2175-76		2176-77		2177-78		2178-79		2179-80		2180-81		2181-82		2182-83		2183-84		2184-85		2185-86		2186-87		2187-88		2188-89		2189-90		2190-91		2191-92		2192-93		2193-94		2194-95		2195-96		2196-97		2197-98		2198-99		2199-00		2200-01		2201-02		2202-03		2203-04		2204-05		2205-06		2206-07		2207-08		2208-09		2209-10		2210-11		2211-12		2212-13		2213-14		2214-15		2215-16		2216-17		2217-18		2218-19		2219-20		2220-21		2221-22		2222-23		2223-24		2224-25		2225-26		2226-27		2227-28		2228-29		2229-30		2230-31		2231-32		2232-33		2233-34		2234-35		2235-36		2236-37		2237-38		2238-39		2239-40		2240-41		2241-42		2242-43		2243-44		2244-45		2245-46		2246-47		2247-48		2248-49		2249-50		2250-51		2251-52		2252-53		2253-54		2254-55		2255-56		2256-57		2257-58		2258-59		2259-60		2260-61		2261-62		2262-63		2263-64		2264-65		2265-66		2266-67		2267-68		2268-69		2269-70		2270-71		2271-72		2272-73		2273-74		2274-75		2275-76		2276-77		2277-78		2278-79		2279-80		2280-81		2281-82		2282-83		2283-84		2284-85		2285-86		2286-87		2287-88		2288-89		2289-90		2290-91		2291-92		2292-93		2293-94		2294-95		2295-96		2296-97		2297-98		2298-99		2299-00		2300-01		2301-02		2302-03		2303-04		2304-05		2305-06		2306-07		2307-08		2308-09		2309-10		2310-11		2311-12		2312-13		2313-14		2314-15		2315-16		2316-17		2317-18		2318-19		2319-20		2320-21		2321-22		2322-23		2323-24		2324-25		2325-26		2326-27		2327-28		2328-29		2329-30		2330-31		2331-32		2332-33		2333-34		2334-35		2335-36		2336-37		2337-38		2338-39		2339-40		2340-41		2341-42		2342-43		2343-44		2344-45		2345-46		2346-47		2347-48		2348-49		2349-50		2350-51		2351-52		2352-53		2353-54		2354-55		2355-56		2356-57		2357-58		2358-59		2359-60		2360-61		2361-62		2362-63		2363-64		2364-65		2365-66		2366-67		2367-68		2368-69		2369-70		2370-71		2371-72		2372-73		2373-74		2374-75		2375-76		2376-77		2377-78		2378-79		2379-80		2380-81		2381-82		2382-83		2383-84		2384-85		2385-86		2386-87		2387-88		2388-89		2389-90		2390-91		2391-92		2392-93		2393-94		2394-95		2395-96		2396-97		2397-98		2398-99		2399-00		2400-01		2401-02		2402-03		2403-04		2404-05		2405-06		2406-07		2407-08		2408-09		2409-10		2410-11		2411-12		2412-13		2413-14		2414-15		2415-16		2416-17		2417-18		2418-19		2419-20		2420-21		2421-22		2422-23		2423-24		2424-25		2425-26		2426-27		2427-28		2428-29		2429-30		2430-31		2431-32		2432-33		2433-34		2434-35		2435-36		2436-37		2437-38		2438-39		2439-40		2440-41		2441-42		2442-43		2443-44		2444-45		2445-46		2446-47		2447-48		2448-49		2449-50		2450-51		2451-52		2452-53		2453-54		2454-55		2455-56		2456-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COMPARATIVE STATEMENT NO. IV—*Showing the number of persons primarily
of the undermen*

ESTABLISHMENT.	PERSONS PRIMARILY							
	1901-02.		1902-03.		1903-04.		1904-05.	
	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
1	2	3	4	5	6	7	8	9
Government ...	21,618	21,248	11,170	11,009	10,201	10,171	13,130	13,089
Municipal ...	96,549	93,329	88,735	84,114	93,840	89,343	97,397	92,823
Local Funds ...	56,587	55,291	95,539	101,936	88,887	87,091	82,470	80,295
Native States ...	35,701	33,703	21,618	20,506	43,622	42,060	44,332	43,257
Dispensaries ...	4,677	4,296	4,762	4,336	5,355	5,005	2,817	2,745
Work done by ex-inoculators.	1,397,066	1,377,329	1,476,472	1,456,741	1,459,736	1,441,824	1,593,173	1,572,571
Total ...	1,612,198	1,585,196	1,698,296	1,678,642	1,701,641	1,675,494	1,833,319	1,804,780

OFFICE OF THE SANY. COMM. FOR BENGAL;

The 9th June 1911.

*vaccinated and the number of those persons who were successfully vaccinated in each
tioned official years.*

VACCINATED.

1905-06.		1906-07.		1907-08.		1908-09.		1909-10.		1910-11.	
Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
10	11	12	13	14	15	16	17	18	19	20	21
15,231	15,171	14,848	14,741	13,145	13,126	528	528	696	677	83	83
112,418	106,220	108,209	103,881	106,617	103,297	114,785	111,509	108,284	104,665	105,770	102,136
80,163	76,370	76,958	74,795	95,991	93,183	115,697	109,473	55,924	55,497	109,802	108,212
27,679	26,719	122,039	119,409	93,733	90,976	126,656	119,880	4,269	4,245	4,970	4,956
1,628	1,595	7,062	6,076	4,605	3,923	3,765	3,279	2,675	2,442	3,449	2,853
1,667,506	1,652,572	1,545,860	1,533,657	1,534,030	1,521,992	1,575,438	1,561,832	1,696,737	1,675,003	1,705,148	1,687,204
1,904,625	1,878,647	1,874,976	1,852,559	1,848,121	1,826,497	1,936,869	1,906,501	1,868,585	1,842,529	1,929,222	1,905,444

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,
Sanitary Commissioner for Bengal.

STATEMENT No. VII—Showing the protection afforded to infants in each Town in the Province of Bengal during the year 1910-11.

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
BURDWAN	Burdwan ...	365	68	614	1st July 1883.
	Kalna ...	114	45	164	Ditto.
	Katwa ...	209	52	200	Ditto.
	Dainhat ...	226	45	200	Ditto.
	Raniganj ...	266	50	213	Ditto.
	Asansol ...	223	24	161	14th September 1910.
	Total ...	1,403	284	1,552	
BIRBHUM	Suri ...	164	20	191	1st July 1881.
BANKURA	Bankura ...	536	105	161	1st July 1883.
	Vishnupur ...	572	80	349	Ditto.
	Sonamukhi ...	433	88	40	6th June 1892.
	Total ...	1,541	273	550	
MIDNAPORE	Midnapore ...	811	202	566	1st July 1883.
	Ghatal ...	519	51	325	Ditto.
	Kharar ...	281	44	113	16th August 1889.
	Chandrakona ...	228	39	63	1st July 1883.
	Ramjibanpur ...	291	71	184	Ditto.
	Khirpai ...	136	25	127	Ditto.
	Tamluk ...	179	32	135	Ditto.
	Total ...	2,445	464	1,513	
HOOGHLY	Hooghly and Chinsura ...	744	200	402	1st September 1881.
	Bansberia ...	116	37	192	1st July 1883.
	Arambagh ...	169	34	123	11th February 1889.
	Serampore ...	1,049	262	479	1st March 1883.
	Uttarpara ...	156	28	33	1st April 1883.
	Kotrung ...	150	27	49	1st July 1883.
	Baidyabati ...	496	108	197	Ditto.
	Bhadreswar ...	343	94	117	Ditto.
	Total ...	3,223	730	1,592	

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
HOWRAH	Howrah	3,749	1,070	1,897	1st April 1882.
	Bally	403	89	445	1st October 1884.
	Total	4,152	1,159	2,342	
	Total of the Burdwan Division.	12,928	2,930	7,740	
	Cossipore-Chitpur	696	257	903	1st October 1883.
	Manicktala	869	328	870	Ditto.
	South Suburban	873	166	843	Ditto.
	Tollygunge	382	57	276	Ditto. (It formerly formed a part of the South Suburban Municipality.)
	Garden Reach	807	224	720	1st October 1883. (It formerly formed a part of the South Suburban Municipality.)
	Budge-Budge	292	31	248	18th February 1902.
24-PARGANAS	Baranagar	450	121	380	1st October 1883.
	Kamarhati	402	68	251	Ditto. (It formerly formed a part of the Baranagar Municipality.)
	Rajpur	349	57	182	1st October 1883.
	Baruipur	44	6	69	Ditto.
	Jaynagar	137	26	82	Ditto.
	North Dum-Dum	129	32	61	Ditto.
	South Dum-Dum	301	62	130	Ditto.
	South Barrackpore including Barrackpore Cantonment.	141	22	179	Ditto.
	Panihati	334	68	87	Ditto. (It formerly formed a part of the South Barrackpore Municipality.)
	North Barrackpore.	322	44	56	1st October 1883.
	Titagarh	197	64	106	Ditto. (It formerly formed a part of the South Barrackpore Municipality.)
	Garulia	125	37	134	1st October 1883. (It formerly formed a part of the North Barrackpore Municipality.)

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1		3	4	5	6
24-PARGANAS— <i>cont'd.</i>	Naihati ...	261	47	76	1st October 1883.
	Halisahar ...	253	45	149	Ditto. They formerly formed parts of the Naihati Municipality.
	Bhatpara ...	504	97	171	
	Barasat ...	178	22	182	1st October 1883.
	Gobardanga ...	74	20	102	Ditto.
	Basirhat ...	431	74	257	Ditto.
	Baduria ...	280	34	158	Ditto.
	Teki ...	144	27	65	Ditto.
	Total ...	8,975	2,036	6,687	
CALCUTTA ...	Calcutta ...	17,913	4,622	5,031	1880.
NADIA ...	Krishnagar ...	507	91	459	1st October 1883.
	Nadia ...	238	52	94	Ditto.
	Ranaghat ...	225	36	282	Ditto.
	Birnagar ...	68	31	31	Ditto.
	Santipur ...	921	181	383	Ditto.
	Chakdaha ...	101	32	95	28th January 1887.
	Kushtia ...	70	12	53	1st October 1883.
	Kumarkhali ...	108	20	35	Ditto.
	Meherpur ...	252	32	115	Ditto.
	Total ...	2,490	487	1,547	
MURSHIDABAD ...	Berhampore ...	601	141	411	1st October 1883.
	Murshidabad ...	289	89	139	Ditto.
	Azimganj ...	338	100	176	Ditto. (It formerly formed a part of the Murshidabad Municipality.
	Kandi ...	469	103	210	1st October 1883.
	Jangipur ...	384	78	256	Ditto.
	Dhuliyān ...	296	42	304	26th June 1910.
	Total ...	2,377	553	1,496	

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
JESSORE	Jessore ...	111	23	94	1st October 1883.
	Kotehandpur ...	164	46	123	1st February 1884.
	Maheshpur ...	71	20	78	1st October 1883.
	Total ...	346	88	295	
KHULNA	Khulna ...	215	43	88	1st July 1887.
	Satkhirra ...	133	32	114	7th July 1883.
	Debhatta ...	114	22	77	1st October 1883.
	Total ...	462	97	279	
Total of the Presidency Division.		32,563	7,883	15,335	
PATNA	Patna ...	3,412	882	1,400	1st October 1884.
	Bihar ...	1,044	195	836	1st April 1887.
	Dinapore ...	875	138	569	28th January 1891.
	Barh ...	308	57	218	1st April 1887.
	Khagole ...	172	54	43	12th July 1910.
	Total ...	5,811	1,326	3,066	
GAYA	Gaya ...	2,237	826	1,933	1st January 1883.
	Tikari ...	274	53	218	3rd January 1891.
	Daudnagar ...	269	46	217	Ditto.
	Total ...	2,780	925	1,468	
SHAHABAD	Arrah ...	732	102	848	20th July 1885.
	Buxar ...	229	47	278	1st April 1887.
	Dumraon ...	117	37	146	Ditto.
	Jagadishpur ...	247	64	184	20th December 1890.
	Sasaram ...	483	67	405	1st April 1887.
	Bhabhua ...	141	34	116	Ditto.
	Total ...	1,949	351	1,977	
Total of the Patna Division.		10,540	2,602	6,511	
SARAN	Chapra ...	1,542	317	1,324	1st April 1887.
	Revelgang ...	469	102	272	12th December 1890.
	Siwan ...	542	91	440	1st April 1887.
	Total ...	2,553	510	2,036	

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
CHAMPARAN ...	Bettiah ...	750	106	834	1st April 1887.
	Motihari ...	465	112	277	Ditto.
	Total ...	1,215	218	1,111	
MUZAFFARPUR...	Muzaffarpur ...	1,341	319	1,174	1st January 1886.
	Sitamarhi ...	385	91	279	1st April 1887.
	Hazipur ...	829	158	582	1st May 1890.
	Lalganj ...	336	65	259	1st April 1887.
	Total ...	2,891	633	2,294	
DARBHANGA ...	Darbhanga ...	2,229	483	1,065	24th May 1884.
	Roserah ...	406	100	230	2nd January 1891.
	Samastipur ...	331	49	132	25th July 1910.
	Madhubani ...	661	135	309	1st April 1887.
	Total ..	3,627	767	1,736	
	Total of the Tirhut Division.	10,286	2,128	7,177	
MONGHYR ...	Monghyr ...	1,442	271	1,289	15th November 1882.
	Jamalpur ...	1,078	254	1,061	Ditto.
	Total ...	2,520	525	2,350	
BHAGALPUR ...	Bhagalpur ...	1,453	309	814	15th February 1884— Withdrawn on 16th October 1895. Re- extended on 18th August 1898.
	Colgong ...	150	30	61	15th February 1884— Withdrawn on 16th October 1895. Re- extended on 19th December 1901.
	Total ...	1,603	339	875	
PURNEA ...	Purnea ...	519	92	183	1st July 1887.
	Kishanganj ...	169	30	179	12th November 1892.
	Katihar ...	513	55	121	8th August 1910.
	Total ...	1,201	177	483	

DISTRICT,	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccination on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
DARJEELING ...	Darjeeling ...	378	81	143	1st September 1884.
	Kurseong ...	216	45	268	1st January 1887.
	Total ...	594	126	411	
SONTHAL PARGANAS.	Sahibganj ...	665	129	320	1st May 1884.
	Deoghur ...	298	68	171	Ditto.
	Dumka ...	217	45	103	Notification dated 9th April 1884 and 23rd August 1910.
	Madhupur ...	202	47	69	22nd August 1910.
	Total ...	1,382	289	663	
	Total of the Bhagalpur Division.	7,300	1,456	4,782	
CUTTACK ...	Cuttack ...	1,392	325	2,303	1st September 1884.
	Kendrapara ...	519	104	563	7th February 1888.
	Jajpur ...	418	91	494	Ditto.
	Total ...	2,329	520	3,360	
BALASORE	Balasore ...	365	83	194	7th February 1888.
PURI ...	Puri ...	697	236	395	Ditto.
SAMBALPUR ...	Sambalpur ...	446	95	232	7th March 1895.
	Total of the Orissa Division.	3,837	934	4,181	
HAZARIBAGH ...	Hazaribagh ...	707	105	374	1st January 1885.
	Chatra ...	409	67	96	1st August 1885.
	Giridih ...	199	30	315	8th September 1910.
	Total ...	1,315	202	785	
RANCHI ...	Ranchi ...	1,008	108	871	1st April 1887.
	Lohardaga ...	238	44	186	25th June 1892.
	Total ...	1,246	152	1,057	
PALAMU ...	Daltonganj ...	280	70	247	9th October 1890.
MANBHUM ...	Purulia ...	320	55	238	1st January 1887.
	Raghunathpur ...	90	8	81	19th February 1894.
	Jhalda ...	103	15	81	9th July 1892.
	Total ...	513	78	400	

DISTRICT.	Town.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1911.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
SINGHBHUM ...	Chaibasa ...	275	53	214	20th June 1892.
	Total of the Chota Nagpur Division.	3,629	555	2,703	
	Total for the Province.	81,083	18,488	48,429	

OFFICE OF THE SANY. COMM.
FOR BENGAL;

The 9th June 1911.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,

Sanitary Commissioner for Bengal.

PROVINCIAL STATEMENT A--Showing the degree of protection afforded to infants during the year 1910-11.

DISTRICTS.	Rural population among which vaccinations were performed.	Estimated birth at 40-60 per 1,000 of population (being the actual birth rate for the province during the year 1910).	Mortality among infants under one year.	Surviving population under one year available for vaccination.	Number successfully vaccinated.	Proportion of persons successfully vaccinated per 1,000 of population as shown in column 5.	Proportion of persons successfully vaccinated per 1,000 of population in 1909.
1	2	3	4	5	6	7	8
Ranchi ...	1,157,992	47,246	10,355	36,891	42,711	1,157.6	965.00
Sambalpur ...	626,092	25,545	7,600	17,945	19,865	1,107.03	878.07
Palamau ...	613,763	25,042	6,446	18,596	16,365	880.07	750.32
Cuttack ...	1,984,038	80,940	21,562	69,387	49,166	872.72	684.14
Hazaribagh ...	1,142,130	46,599	10,841	36,758	30,833	862.29	663.18
Murshidabad ...	1,249,128	50,964	12,481	38,483	32,135	835.04	741.00
Manbhum ...	1,275,025	52,021	9,337	42,684	31,911	747.61	657.14
Singhbhum ...	604,926	24,681	3,011	21,670	16,982	737.55	402.27
Balasure ...	1,050,317	42,853	11,716	31,137	21,961	705.32	424.20
Bhagalpur ...	2,007,456	81,904	12,701	69,203	48,269	697.49	736.27
Nadia ...	1,663,212	63,779	12,968	50,811	34,367	676.17	638.16
Sonthal Parganas ...	1,781,442	72,683	11,132	61,551	41,468	678.73	663.19
Muzaffarpur ...	2,668,076	108,868	18,006	90,862	61,070	672.19	474.61
Darjeeling ...	227,724	9,391	1,849	7,442	5,002	672.13	725.37
Monghyr ...	2,013,966	82,170	13,960	68,210	43,712	610.85	611.54
Purnea ...	1,844,044	75,237	14,319	60,918	58,115	625.68	589.66
Saran ...	2,337,393	95,366	19,270	76,096	45,527	598.29	506.58
Champaran ...	1,752,037	71,483	15,292	56,191	33,456	595.39	681.46
Angul ...	191,911	7,830	1,502*	6,328	3,736	590.48	626.34
Darbhanga ...	2,809,219	114,616	13,370	101,246	66,806	661.06	611.35
Gaya ...	1,972,336	80,471	17,287	63,184	34,579	647.27	558.16
Midnapore ...	2,699,238	110,129	18,918	91,211	50,330	546.73	558.36
Political States of Singhbhum.	141,079	6,756	1,104*	4,652	2,543	546.64	448.65
Burdwan ...	1,446,744	58,986	11,667	47,419	24,233	511.03	655.17
Bankura ...	1,063,136	43,376	9,545	33,831	17,119	506.03	406.50
24-Parganas ...	1,680,229	68,663	10,116	58,487	28,766	492.25	502.99
Hooghly ...	915,149	37,338	7,054	30,284	14,904	492.14	493.22
Jessore ...	1,791,856	73,108	11,669	61,439	29,970	487.80	661.93
Howrah ...	679,691	27,731	4,647	23,084	10,509	465.25	437.82
Puri ...	967,950	39,492	9,494	29,998	13,601	463.41	657.46
Khulna ...	1,226,782	50,053	9,097	40,956	15,697	383.27	349.93
Birbhum ...	893,588	36,458	8,025	28,433	10,618	373.43	831.23
Patna ...	1,403,215	67,251	12,899	44,352	14,850	334.82	409.08
Shahabad ...	1,844,590	75,259	16,867	58,392	17,483	299.40	395.88
Total of the Rural Circle.	47,644,471	1,943,078	376,107	1,567,971	957,668	610.77	587.25
Calcutta ...	847,796	34,590	4,622	29,968	5,031	167.87	200.84
Municipalities, etc.	2,382,327	97,199	18,488	78,711	44,130	560.66	570.19
GRAND TOTAL ...	50,864,594	2,074,867	398,217	1,676,650	1,006,829	600.50	579.75

* Registration of births and deaths is not carried on in these places. The number of deaths among infants in them has been calculated at the rate of infant mortality, 181.86 obtaining in the province during the year 1910.

OFFICE OF THE SANIT. COMM. FOR BENGAL, } W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,

The 9th June 1911.

Sanitary Commissioner for Bengal.

MUNICIPAL DEPARTMENT.

SANITATION.

CALCUTTA, THE 22ND JULY 1911.

RESOLUTION—No. 1352 San.

READ—

The Report of the Sanitary Commissioner, Bengal, for the year 1910.

Read also—

The Triennial Report on Vaccination in Bengal for the years 1908-09 to 1910-11.

Lieutenant-Colonel F. C. Clarkson, I.M.S., was in charge of the Department till the 28th February 1910, when he was succeeded by Major W. W. Clemesha, who remained in charge for the remainder of the year.

2. *Climatic conditions.*—During the pre-monsoon period, while rain was fairly general, the showers were light, and the early monsoon current was also weak. The monsoon rains continued, however, well into September and October, while in November there was rain throughout Bihar and in parts of Chota Nagpur. On the whole, the climatic conditions of the year were favourable, and the outturn of the different harvests was satisfactory.

3. *Births and deaths.*—In the absence of the detailed figures of the census of 1911, the various ratios referred to below have been calculated on the basis of the census of 1901. The year 1909 had shown an increase of births, concurrently with a decrease of deaths, in comparison with the two preceding years, but during 1910, while the number of births again rose, the mortality was higher than in 1909. The number of births registered (exclusive of Angul) was 2,007,222 or 39·72 per mille of population, as compared with 1,909,547 or 37·79 per mille during the previous year. The result may be attributed to the healthiness of the preceding year and to the cheaper prices of food-grains which then prevailed. The most marked improvement was shown in Orissa, which stood second in comparison with other Divisions, with a birth-rate of 43·99 per mille, as against 33·87 in 1909, the worst result recorded during that year. The number of deaths reported aggregated 1,672,640 or 33·10 per mille of population, as against 1,543,971 or 30·55 per mille during 1909. This deterioration in the general health was almost solely due to the prevalence of cholera and plague, which was especially marked in the Patna and Tirhut Divisions. Comparing the mortality in urban and rural areas, it is in respect of fever only that the former show to marked advantage, as other diseases, on the basis of the figures for the last five years, are less prevalent in the country than in towns. As regards deaths from fever, Calcutta returns far better results than other towns. In comparison with other Provinces, Bengal stood fourth in the order of birth-rate, as against third in the preceding year, and fifth as regards death-rate, the same position which it occupied in 1909.

4. The verification of the registration of vital statistics by the vaccination staff was conducted on a larger scale than in the previous year, and the worst results were reported from Khulna, Shahabad, and the Sonthal Parganas. The results in the first named district were extraordinarily bad, and the Commissioner of the Presidency Division will be requested to furnish an explanation. It is difficult to explain the fluctuations in the figures in certain areas unless on the assumption of a varying degree of accuracy in the returns. Thus, there is no very obvious reason why the birth-rate in the district of Singhbhum, in comparison with the previous year, should suddenly rise from 30·23 to 44·80, or that in the town of Katihar, Purnea, from 12·12 to 48·39 per mille.

5. *Cholera*.—Following upon the good results of 1909, cholera again assumed serious proportions during the year under review, being responsible for 162,611 deaths (3·21 per mille), in comparison with 56,711 or 1·12 per mille. The mortality, however, was below the average (1,74,051) of the five years 1905-09. The Patna and Tirhut Divisions suffered most severely, and, as usual, the disease was spread by the disregard of precautions in respect of drinking water. The use of permanganate of potash for disinfecting wells was resorted to with good results, noticeably in Gaya, Shahabad, Champaran and Darbhanga, but in Purnea, owing to the ignorance of the people, opposition was encountered, which the local officers should endeavour to break down. The District Boards and Municipalities in the areas worst affected (noticeably in Muzaffarpur), should do their utmost to effect an improvement of the sources of water-supply. In Sitamarhi, no less than 16·35 per mille of the population succumbed.

6. *Small-pox*.—The year was marked by a large and satisfactory decrease in mortality from this cause, the total number of deaths being 7,440 only, as compared with 38,609 in the preceding year, and 26,612, the average of the five years 1905-09. In fact, the mortality was the lowest recorded since 1888-89. Only one town, Bankura, suffered severely, and the matter of vaccination in this area should receive special attention.

7. *Vaccination*.—The report on vaccination is for the triennial period 1908-09 to 1910-11, during which the total number of operations performed averaged 2,036,145 per annum, of which 166,805 were revaccinations, in comparison with an annual average of 1,897,867 (121,865 revaccinations) during the preceding triennium. It is calculated that 600·5 infants per 1,000 were successfully vaccinated in 1910-11, as compared with 534·54 per 1,000 in 1907-08, the last year of the previous triennial period. The average annual cost of the operations was Rs. 2,03,526, as compared with Rs. 1,70,555 during the years 1905-06 to 1907-08. These results are so far satisfactory, and the progress made in Orissa, noticeably in Balasore, shows what can be done if special attention is given to the subject. During the triennium the system of vaccination from lymph was introduced in Chota Nagpur, in place of the arm to arm method, and the Darjeeling Animal Vaccination Dépôt was abolished. It had been maintained as a reserve to the Calcutta Dépôt, but now that the latter can keep an ample stock of lymph in cold storage, the expense of a second dépôt can be avoided.

8. *Plague*.—The gradual decline in the mortality from plague since 1905 unfortunately received a sudden check, and 46,584 deaths were registered from this cause, as compared with 11,779 in 1909. No reason can be assigned for this increase, but it synchronises with similar results throughout India. The disease, as usual, was most severe in Saran (in which district nearly half the total number of deaths occurred), followed by Patna, Shahabad and Monghyr. Among towns, the four worst affected were Monghyr, Siwan, Jamalpur and Buxar. In Calcutta there was a considerable decrease in the mortality from this disease. It is noticeable that Major Gwyther, I.M.S., Civil Surgeon of Saran, reports that the *foci* of the epidemic in that district during 1910, were much more scattered than during the preceding year. Places far distant from one another were attacked, while the intervening country was free, and the spread of the disease was not from village to village. The number of plague inoculations performed was only 349, as against 704 in the preceding year. These were confined to the districts of Saran, Patna and Monghyr, and the figures for the last five years show a steady decline. The evacuation of houses continued to be the only preventive measure regularly resorted to, and in all the circumstances this is the most efficacious and practicable course, but disinfection and the use of kerosine oil emulsion were also tried in some districts. Upwards of 3,70,000 rats are reported to have been destroyed, but the numbers are less than in the previous year.

9. *Fever*.—The downward tendency in the mortality from this disease which was noticed in the report for 1909, was maintained during 1910, the total number of deaths recorded being 1,031,929 (or 20·42 per mille) compared with 1,056,237 (20·90 per mille) in 1909, and 1,151,909 (22·79 per mille), the average of the five years 1905-1909. The worst affected district was Shahabad, in which the mortality was 30·25 per mille, followed by Darjeeling and Purnea. It is satisfactory to note that Darbhanga, which was badly stricken in 1909,

returned a rate of 23·77 only during the year under review. Among towns, Sahibganj in the Sonthal Parganas was again the worst sufferer, but with a decreased mortality of 35·06 per mille, as again 40·75 per mille in 1909. On

	Death-rate from fever per mille.
Bihar ...	24·02
Chota Nagpur ...	20·24
Bengal ...	17·82
Orissa ...	12·22

the basis of the figures for the last six years, Bihar and Chota Nagpur are markedly more feverish than either Bengal or Orissa, and the comparative rates of mortality, in each during 1910 are reproduced in the margin. Anti-malarial measures were carried on in North Barrackpore, (mainly at the cost of Government), and in Cossipore-Chitpur, Manicktolla, Garden Reach, Titaghar, Panihati, Hazaribagh and Daltonganj, at the expense of the local Municipalities.

10. A Provincial Malaria Committee was appointed during the year with a view to supervising the continuous investigation of the question of the prevalence of malaria, and an executive staff consisting of a Special Deputy Sanitary Commissioner and an Assistant Surgeon was placed at its disposal. It is hoped that more systematic methods of work will eventually result in the discovery of some means of dealing with this scourge, although the financial difficulty of executing works of drainage, etc., on an extensive scale has not yet been solved.

The successful experiment of appointing itinerant Sub-Assistant Surgeons to specially malarious districts was continued and extended, 23 Sub-Assistant Surgeons being deputed, as against 19 in 1909, to work in seven districts as compared with six in 1909. In Purnea the experiment was tried, with some success, of a regular free issue of quinine to Government servants in receipt of pay of Rs. 10 per mensem and less, but it is significant that the districts of Shahabad, Darjeeling and Purnea, in which the highest mortality from malaria was recorded, show a comparatively small consumption of this drug.

11. *Dysentery and diarrhœa*.—Following the increased prevalence of cholera, there was a corresponding rise in mortality from this cause, the number of deaths being 45,902, or ·90 per mille, as compared with 35,981 or ·71 per mille in 1909. The Orissa Division, as usual, suffered most, and the Bhagalpur Division least.

12. *Respiratory diseases*.—The number of deaths reported from this cause was 15,447, as compared with 15,071 in 1909. As noticed in previous reports, the figures cannot be accepted as reliable.

13. *Injury*.—Twenty-five thousand, three hundred and fifty-seven deaths occurred under this head, as compared with 27,280 in the preceding year. It is noticeable that the Sanitary Commissioner reports that the districts of Cuttack, Jessore, the 24-Parganas and Nadia always return the largest mortality from suicide, while the number of females who took their own lives was almost double that of males. Ninety cases of snake-bite were treated with permanganate of potash, as compared with 59 during 1909, of which nearly 82 per cent. are claimed to have recovered. Nine cases, out of 11, treated with antivenene in Saran proved successful.

14. *Sanitary improvements*.—The total expenditure by municipalities on conservancy, drainage and water-supply during the year 1909-10 continued to increase, and amounted to Rs 24,88,154, which is Rs. 2,90,774 in excess of the figure of 1908-09. It is satisfactory to note that there was a marked improvement in the working of the septic tank installations on the banks of the Hooghly, and it is reported that analysis shows the effluent to be virtually sterile as it passes into the river. The Sanitary Commissioner's laboratory was enlarged during the year, and all water analyses (both chemical and bacteriological) are now undertaken at it.

15. *Sanitary Board*.—During the year under report, sketch projects for six water-supply schemes (at Uttarpara, Puri, Bankura, Kalna, Satkira and Patna, respectively) were under consideration, and 13 water-supply schemes (at Darjeeling, Monghyr, Bhagalpur, Naihati, Bhatpara, Jessore, Gaya, Serampore, the South Suburban Municipality, Hooghly-Chinsura, Howrah, Khulna and Kurseong) were either under construction or had reached the stage when tenders for the contracts had been called for. A comprehensive and expensive scheme for the supply of water to the whole of the Jherria coal fields was also under examination. From the statistics furnished by the

Sanitary Board, it appears that (exclusive of Calcutta) there are at present in the Province 19 municipalities possessing water-works on a more or less elaborate scale, which serve a population of rather over half a million, and the total capital cost of which, up to the 31st December 1910, was approximately Rs. 48 lakhs. Although much still remains to be done in this direction, it is obvious that a substantial beginning has been made towards the proper equipment of the towns in Bengal in this respect, the more so when it is remembered that the majority of these installations were constructed since the commencement of the century. It is estimated, moreover, that in two years the quantity of filtered water supplied to the inhabitants of municipalities in Bengal will be increased by about 75 per cent. Thirteen drainage schemes were under examination during the year at Bhagalpur, Gaya, Sahibganj, Azimganj, Kushtia, Motihari, Ranchi, North Barrackpore, Bhadreswar, Asansol, Manicktolla, Chapra and Purulia, while drainage projects at Howrah, Puri, Arrah, Daltonganj, Bhatpara, Baranagore, Budge-Budge, Basirhat, Baraset and Baruipur were under construction. In four cases (Hazariabagh, Berhampore, Burdwan and Monghyr) tenders have been called for. From the figures furnished it appears that (outside Calcutta) 20 towns are provided with drainage works of varying degrees of completeness, upon which a capital expenditure of about Rs. 16½ lakhs has been incurred, up to the 31st December 1910. Many of these are still in progress, but the record is by no means insignificant, and the Lieutenant-Governor in Council notices with pleasure the report of the Sanitary Board that greater progress has been achieved, during the year under review, in the preparation of schemes of water-supply and drainage (particularly the former) than was ever the case before in the annals of the Board. A specially liberal provision has been made during the current year for grants-in-aid to these projects, and it behoves local bodies to bestir themselves to establish a claim to assistance, by demonstrating that they are willing, on their part, to contribute towards the improvement of the areas in their charge.

16. The thanks of the Lieutenant-Governor in Council are due to Major Clemesha and to the Sanitary Board for their energetic administration of the Department. The work of Captain Ross, I.M.S., Deputy Sanitary Commissioner, Bihar and Chota Nagpur, is also particularly commended.

By order of the Lieutenant-Governor in Council,

H. WHEELER,

Secretary to the Govt. of Bengal.

No. 1353 San.

Copy forwarded to the Sanitary Commissioner, Bengal, for information.

Nos. 1354-57 San.

COPY, with copies of the reports referred to, forwarded to the

Inspector-General of
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Secretary, Sanitary

Civil Hospitals
Prisons
Police
Board

, Bengal, for information.

Circular No. 43 San.

COPY, with copies of the reports referred to, forwarded to all Commissioners of Divisions for information and for communication to all District Officers in their respective Divisions.

By order of the Lieutenant-Governor in Council.

M. G. HALLETT,

Offg. Under-Secretary to the Govt. of Bengal.

CALCUTTA;

The 24th July 1911.

