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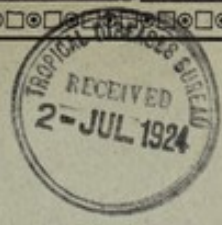
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TWELFTH TRIENNIAL REPORT

on

VACCINATION IN BENGAL

for the years

1920-21, 1921-22 and 1922-23

by

DR. C. A. BENTLEY, M.B., D.P.H., D.T.M. & H.,

Director of Public Health, Bengal

CALCUTTA :
THE BENGAL SECRETARIAT BOOK DEPOT.
1923.

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**TWELFTH TRIENNIAL REPORT ON VACCINATION IN BENGAL
FOR THE YEARS 1920-21, 1921-22 AND 1922-23.**

1. I submit the following report on Vaccination in Bengal for the triennial period from 1920-21 to 1922-23.

2. **Officer-in-charge of the department.**—I was in superior charge of the department throughout the triennial period except for the period from the 21st April 1921 to the 23rd October 1921 when I was on leave and Dr. R. B. Khambata held the charge. During this triennium, the post of a whole-time Assistant Director of Public Health was created to deal with the subjects of Vaccination and Vital Statistics of the Presidency under my direction. Dr. Sufi was appointed to the post with effect from the 17th September 1921. He went on leave on the 9th January 1922 when Dr. Batra held charge till the 31st March 1923.

Dr. Brahmachari was in charge of the Presidency Circle throughout this triennial period ; Drs. Ray, Ghosh and Sur, of the Burdwan Circle ; Drs. Sufi, Ghosh and Ray, of the Dacca Circle and Drs. Ghosh, Sen, Ray and Gupta, of the Rajshahi Circle.

3. **Strength of staff.**—The average number of inspecting officers and vaccinators in Calcutta were 14 and 48 during the triennial period under report against 14 and 62 during the previous epoch. In the rural areas of the Presidency, they numbered 133 and 1,639, and in the mufassal municipalities, dispensaries, etc., 7 and 170 as compared with 133 and 1,576, and 6 and 170 during the previous triennial period.

4. **General operations.**—The total number of operations reported to have been performed in the Presidency during the year 1922-23 was 2,006,140 on 2,001,948 persons against 1,761,626 on 1,758,697 persons during the previous year, showing an increase of 244,514 or 13·8 per cent. operations. Of the total operations 1,526,385 or 76·1 per cent. were recorded as primary and 479,755 or 23·9 per cent. as re-vaccinations against 1,266,551 or 72 per cent. primary and 495,075 or 28·1 per cent. re-vaccinations during the year 1921-22. There was thus during the year 1922-23 an increase of 259,834 or 20·5 per cent. in primary and a decrease of 15,320 or 3·02 per cent. in re-vaccination operations. The average number of operations performed during the triennial period under review was 2,031,422 with 1,404,324 primary and 627,098 re-vaccinations, the corresponding figures for the previous triennial period being 2,195,353, 1,432,923 and 762,430 respectively. There was thus a decrease of 163,931 operations on an average during this triennial period, showing a falling off of 28,599 cases in primary and 135,332 in re-vaccination. Severe outbreak of small-pox throughout the Presidency was chiefly the cause of the greatly increased amount of vaccination during the previous triennium.

Though there was a decrease in the average number of vaccinations, as compared with that of the previous triennial period, it will be seen that in comparing the figures of the year 1922-23 with those of the previous year, the state of vaccination work in the Presidency was satisfactory. The average rate of success in primary and re-vaccinations during the triennial period was slightly lower than that in the previous triennium, viz., 95·9 and 62·9 against 96·7 and 67·9. The average number of operations performed by a vaccinator was 1,089 against 1,187 of the previous triennium. The average work of a paid and licensed vaccinator was 1,196 and 826 against 1,365 and 1,105 of the previous triennium.


As compared with the previous year (1921-22) there was an increase of total operations in 18 and a decrease in 10 districts, including Calcutta. The increase was most marked in Mymensingh (57,573), Rangpur (45,609),

Midnapur (31,358), Dacca (31,060), Pabna (19,436), 24-Parganas (17,572), Nadia (15,254), Chittagong (13,150), Jalpaiguri (12,826), Rajshahi (12,008), Murshidabad (11,425), Birbhum (9,850), Noakhali (7,821), Malda (7,208), Bankura (5,753) and Bakarganj (5,003). While in other two districts (Chittagong Hill Tracts and Jessore) the increase was below 5,000. The largest decrease (37,647) was reported from Calcutta, the principal reduction (36,458) being in re-vaccination cases. This may be attributed to the large number of re-vaccination cases having been performed during the previous year (1921-22) in anticipation of a small-pox epidemic. The decrease was marked in Burdwan (16,385), Faridpur (8,569), Bogra (4,300), Howrah (4,007), Khulna (1,688) and Tippera (1,088). In other three districts, viz., Darjeeling, Hooghly and Dinajpur, the decrease was insignificant. Although there was a decrease in the total number of operations and also in re-vaccinations (41,023) in Tippera, still it stands first as regards increase (39,935), in the number of primary operations. The District Health Officer of Tippera attributes the reduction in re-vaccination cases to the absence of small-pox in epidemic form and to the fact that under the law as it stands at present the people cannot be compelled to accept re-vaccination in places where small-pox breaks out. The increase in primary cases in that district was due to the introduction of free and compulsory vaccination. The flood of the last year was responsible for the decrease of vaccination work in the Bogra District. In the list of increase in primary cases next to Tippera come Rangpur (35,740), Midnapur (29,432), Dacca (29,365), Mymensingh (24,980), Pabna (21,738), 24-Parganas (16,516), Dinajpur (15,572), Birbhum (11,151), Malda (9,947), Murshidabad (9,450), Rajshahi (9,122), Nadia (7,893), Noakhali (7,842) and Chittagong (5,336). In other districts the increase was below 5,000. In 16 out of 28 districts, there was an increase in re-vaccination cases. Mymensingh with an increase of 32,593 operations stands first in the list. Next to this come Rangpur (9,869), Jalpaiguri (8,806), Chittagong (7,814), Nadia (7,361), Bankura (4,340) and Rajshahi (2,886), while the other districts show an increase of 1,000 to 2,000. The large increase in both primary and re-vaccination cases in Mymensingh is attributed to the introduction of the paid system of vaccination, the close supervision of the inspecting officers and the prevalence of small-pox in the district. It was reported that the rate of success higher than 30 per cent. in re-vaccination in Rangpur was due to the absence of immunity amongst the majority of the people re-vaccinated long after primary vaccination. On account of prevalence of small-pox in the Jalpaiguri district, the medical officers of fourteen dispensaries were supplied with lymph and lancets. Propaganda work with posters and pamphlets in *hâts* and railway stations resulted in the increase of primary and re-vaccination operations in Jalpaiguri.

It is a matter of satisfaction that the introduction of free and compulsory vaccination has been successful everywhere. It is reported that 4,000 people of the Debinagar Panchayat Union in the district of Malda have been vaccinated for the first time by the enforcement of the law, no vaccination work, either primary or re-vaccination, was done there within the last 20 years. In places, such as the 24-Parganas, Chittagong and Malda, where many persons who could not be vaccinated by inducement, had to get themselves vaccinated on enforcement of the law. Vaccination in this way is making steady progress.

5. **Protection afforded to infants.**—During 1922-23, out of 998,829, the estimated number of available infants for vaccination, 290,172 or 290·4 per mille were reported to have been successfully vaccinated in the rural areas of this Presidency as compared with 271,735 or 269·11 during the previous year. In nine districts including Calcutta the protection was stated to have been over 500 per mille. The districts in the Dacca Division were the worst in this respect. The protection reported as having been afforded to infants in municipalities is shown in Appendix VII attached to this report. It is stated that 553·3 per mille of the surviving infants in municipalities were protected during the year as compared with 627·5 per mille during the previous year.

6. **Recess work.**—To suppress the outbreaks of small-pox 213,794 vaccinations were performed during the recess or non-working season of



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1922-23 against 244,217 and 618,351 during the two preceding years. The average number of operations of the triennial period under review was 358,787 against 290,917 during the previous epoch.

7. **Six-puncture vaccination.**—The total number of successful primary and re-vaccinations performed in six points during the year amounted to 172,833 and 6,254 respectively against 168,976 and 7,729 during the previous year. The average of the triennial period was 182,297 and 19,952 against 187,796 and 9,739 during the previous epoch.

8. **Factory and tea garden vaccination.**—The total number of primary and re-vaccinations performed in factories and tea gardens in this Presidency during 1922-23 was 5,479 and 2,261 against 4,333 and 6,448 respectively during 1921-22 and 6,485 and 4,976 during 1920-21. It is reported that the managers of many factories and tea gardens do not send the vaccination returns to the Superintendents of Vaccination of the municipalities and District Boards in which these are situated. Their attention is being drawn to it. The average of the triennial period was 5,432 primary and 4,562 re-vaccination cases against 6,193 and 11,056 respectively during the previous triennium.

9. **Cost of and contribution towards vaccination.**—The total average cost of vaccination during the triennial period under review was Rs. 3,59,906-9-6 against Rs. 2,47,585-0-11 during the previous epoch, the cost of each successful case of vaccination being three annas and four pies against two annas and two pies during the previous triennium. Out of the average cost mentioned above Rs. 97,749-12 was contributed by the District Boards and Rs. 262-13-3 by cantonments against Rs. 35,170-4 and Rs. 115-1-4 respectively during the previous triennium. The introduction of paid vaccination system in rural areas is responsible for the increased cost. The local Government contributed a sum of Rs. 25,000 during the year 1922-23 to the District Boards for the promotion of free vaccination.

10. **Diagram illustrating death-rates from small-pox and the degree of protection afforded, during the years from 1913-14 to 1922-23.**—The death-rates from small-pox in each district and the proportion of population protected against the disease by vaccination during the past ten years are shown side by side in the diagram facing this page.

11. **Deaths from small-pox.**—The total number of deaths recorded from small-pox in this Presidency during the year 1922-23 was 7,468 against 6,380 and 21,950 during the two preceding years, the ratio per mille of population being '16 against '14 and '48. The largest number of deaths was recorded in the districts of Jalpaiguri (1,279), Mymensingh (1,090), Dacca (912), Midnapur (881), Chittagong (868), Calcutta (322), 24-Parganas (317), Rangpur (250), Howrah (248), Murshidabad (212), Noakhali (143), Tippera (124), Burdwan (105), Dinajpur (96), Hooghly (95), Malda (95), Nadia (88), Jessore (73), Rajshahi (65), Birbhum (60) and Bankura (54), while the other districts recorded 3 to 50 deaths. There was no death from this disease in the district of Darjeeling.

12. **Bengal Vaccine Depot.**—The total number of calves vaccinated in the Bengal Vaccine Depot during the year 1922-23 was 2,726 against 2,456 and 2,278 during the two preceding years and the quantity of lymph manufactured was 1,706,089 grains against 1,490,222 and 1,506,164 grains, respectively, during the two previous years. The average of the triennial period was 2,486 calves and 1,567,825 grains of lymph against 2,498 calves and 1,210,711 grains of lymph during the previous triennium.

13. **Different methods of vaccination.**—During the year 1922-23, no vaccination was performed with lymph direct from the calf. The total number of primary vaccinations performed with lanoline lymph was 68,212 and with glycerinated lymph 1,458,173 against 256,351 and 1,010,200 during 1921-22 and 535,354 and 882,573 during 1920-21. The percentage of success under each of these methods was 92·7 and 96 against 96·7 and 96·4 during 1921-22 and 97·7 and 95·8 during 1920-21. The number of re-vaccinations performed under each of these methods was 26,821 and 452,934 with a success of 47·8 and 59·8, respectively, against 98,403 and 396,672 with a success of 63·6 and 58·4 per cent. during 1921-22 and 370,095 and 534,254 with a success of 71·05 and 69·6 per cent. during 1920-21.

14. **Inspections.**—During the year 1922-23, Dr. B. B. Brahmachari of the Presidency Circle checked 7,240 primary vaccinations and 2,500 re-vaccinations. His inspections were generally directed to examine whether the provisions of the Bengal Vaccination Act were being regularly enforced. The Assistant Director of Public Health of the Burdwan Circle inspected 1,183 primary and 297 re-vaccination cases while those of the Rajshahi and Dacca Circles 681 and 1,757 primary cases, respectively. They inspected towns and villages at random in order to ascertain the percentage of unprotected children and the state of vaccination there. The District Health Officers inspected 64,191 cases or 3·2 per cent. of the total cases. Three of them, viz., the District Health Officers of Hooghly, Chittagong and Faridpur, inspected over 5,000 operations, 8 from 2,000 to 5,000, 4 from 1,000 to 2,000 and the rest below 1,000. The District Health Officer of Birbhum inspected only 102 cases.

The provincial vaccination inspecting staff inspected 781,632 cases or 39·04 per cent. of the total operations performed in the Presidency. Generally, each Assistant Superintendent of Vaccination inspected the work of all the vaccinators under him once during the season and in some places twice.

15. **General remarks.**—Free vaccination has been introduced all over the Presidency. All the District Boards, except only Darjeeling, have appointed District Health Officers, in accordance with the instructions contained in the Local Government Circular No. 1270-74-San., dated the 3rd December, 1918. They have relieved the Civil Surgeons of their duties in regard to vaccination and other public health works within the District Board areas. The Bengal Vaccination Act was extended to the Darjeeling district in March 1923. It is hoped that the new District Board will see its way to appoint a District Health Officer shortly. The District Board of Nadia was able to engage paid vaccinators only for the month of March and that of Jessore from January, 1923. In Pabna, paid vaccinators were employed till the end of January but for want of funds the District Board was obliged to introduce licensed system of vaccination. The District Health Officer states that the people were unwilling to pay fees under the licensed system and it too proved a failure. Like the previous year, the Dacca District Board could not engage paid vaccinators except for a few days but the Union Boards as usual appointed 17 paid vaccinators.

The inspection work of some of the District Health Officers was not satisfactory. The people in spite of the introduction of the free vaccination system still object to be vaccinated and have not yet realised the benefit of vaccination. To make the scheme a success, it is necessary that District Health Officers should exercise their best tact and energy. No new recruitment for the inspecting staff is now made from the old and inefficient stock of vaccinators. Candidates who have passed the Sanitary Inspectorship Examination are being appointed on a temporary footing pending the proposed transfer of the whole inspecting establishment to District Boards.

16. The prescribed statements are appended to this report.

CHAS. A. BENTLEY, M.B., D.P.H., D.T.M. & H.,

Director of Public Health, Bengal.

CALCUTTA,

The 22nd September 1923.

STATEMENT No. I—Showing particulars of vaccination

Number.	DISTRICT.	Population of districts according to the census of 1921.	Average population per square mile.	Average number of vaccinators employed throughout the year.	TOTAL NUMBER OF PERSONS VACCINATED.			Average number of persons vaccinated by each vaccinator.	PRIMARY	
					Male.	Female.	Total.			
1	2	3	4	5	6	7	8	9	10	
1	BURDWAN DIVISION.	District Board Area ... Paid ...	1,343,185	500	33	25,814	17,603	43,417	1,314	39,474
2		Mining Settlement Area ... Do. ...	...	...	15	10,407	7,700	18,107	1,293	14,253
3		Birbhum ... Do. ...	828,655	479	(a) 12	11,718	10,228	21,947	686	20,364
4		Bankura ... Do. ...	964,487	369	34	30,482	22,609	54,091	1,591	49,107
5		Midnapur ... Do. ...	2,595,071	516	96	81,874	58,829	140,694	1,466	138,073
6		Hooghly ... Do. ...	906,802	783	45	15,110	12,863	27,973	622	26,142
7		Howrah ... Do. ...	778,893	1,502	19	14,541	8,488	23,329	1,212	15,543
	Total of Burdwan Division. ... Paid ...	7,421,093	540	272	189,946	139,312	329,258	1,210	260,926	
8	PRESIDENCY DIVISION.	24-Parganas ... Paid ...	1,998,318	422	83	43,872	33,977	77,849	938	69,148
9		Calcutta ... Do. ...	907,851	43,221	48	33,334	15,854	49,189	1,025	17,612
10		Nadia ... Do. ...	1,390,704	507	(b) 72	8,229	5,195	13,424	186	8,887
11		Murshidabad ... Do. ...	1,182,983	566	(c) 55	22,092	18,294	40,486	726	37,563
12		Jessore ... Do. ...	1,709,924	587	(d) 86	21,571	18,753	40,324	468	34,628
13		Khulna ... Do. ...	1,421,116	391	86	13,287	12,040	25,327	294	21,946
		Total of Presidency Division. ... Paid ...	8,051,896	601	293	165,038	121,410	286,448	729	224,961
	Total ... Licensed ...			179	41,079	34,568	75,597	422	63,693	
	Total ...			672	206,067	155,978	362,045	633	288,674	
14	RAJSHAHI DIVISION.	Rajshahi ... Paid ...	1,457,037	557	69	33,221	26,239	59,460	991	48,143
15		Dinajpur ... Do. ...	1,627,328	478	70	51,474	39,645	91,119	1,501	86,691
16		Jalpaiguri ... Do. ...	921,749	314	29	33,375	17,881	51,256	1,766	24,641
17		Darjeeling ... Do. ...	324,045	215	15	8,929	8,953	16,983	1,061	11,743
18		Rangpur ... Do. ...	2,488,778	713	69	47,945	39,549	78,394	1,307	69,888
19		Bogra ... Do. ...	1,032,300	751	21	13,752	10,917	24,799	1,123	21,879
20		Pabna ... Do. ...	1,344,623	899	(e) 32	18,417	17,309	35,717	1,147	35,492
21	Madda ... Do. ...	955,830	523	32	5,969	5,338	11,307	353	11,233	
	Total of Rajshahi Division. ... Paid ...	10,141,700	524	214	233,728	170,982	404,780	1,789	319,608	
	Total ... Licensed ...			32	5,969	5,338	11,307	353	11,233	
	Total ...			246	239,767	176,320	416,087	1,717	340,841	
22	DACCА DIVISION.	Dacca ... Paid ...	2,975,916	1,097	29	9,500	6,866	16,366	818	11,757
23		Mymensingh ... Do. ...	4,710,669	759	78	49,161	40,743	89,904	1,152	69,294
24		Faridpur ... Do. ...	2,202,783	934	151	133,231	87,569	220,891	1,463	147,014
25		Bakarganj ... Do. ...	2,562,849	739	39	31,149	22,081	53,230	1,774	41,053
		Total of Dacca Division. ... Paid ...	12,453,216	815	241	208,520	142,194	350,714	1,456	355,262
	Total ... Licensed ...			78	49,161	40,743	89,904	1,152	69,294	
	Total ...			219	257,681	182,937	440,618	1,381	324,546	
26	CHITTAGONG DIVISION.	Chittagong ... Paid ...	1,370,760	620	51	45,120	30,749	75,869	1,487	57,883
27		Noakhali ... Do. ...	1,465,671	968	61	33,136	23,025	56,161	921	47,163
28		Tippera ... Do. ...	2,678,627	1,051	103	88,204	69,232	157,536	1,529	130,117
29		Chittagong Hill Tracts ... Do. ...	172,243	34	11	6,088	5,211	11,299	1,027	6,729
		Total of Chittagong Division. ... Paid ...	5,887,701	503	226	172,648	129,217	300,865	1,331	241,992
	Total of Bengal Presidency. ... Paid ...	44,505,696	583	1,446	969,950	702,115	1,672,065	1,156	1,312,669	
	Total ... Licensed ...			299	96,159	80,649	176,808	612	144,210	
	Total ...			1,735	1,066,109	782,764	1,848,873	1,065	1,456,879	

(a) Includes 10 Secretaries of Union Boards who worked as vaccinators. (b) Out of this number 72 vaccinators worked under paid system for a month only.
 (c) Includes 13 vaccinators who worked under licensed system during the recess season.
 (d) These vaccinators worked under licensed system from October to December 1922 and then under paid system till March 1923.
 (e) These vaccinators worked under licensed system during February and March 1923.

Sum

	Total number of persons vaccinated.		Total number of operations performed.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.
<i>By Special Staff.</i>				
Licensed ...	144,310	32,598	144,210	32,598
<i>By Dispensary Staff.</i>				
Municipalities, Jails, Cantonments, Dispensaries, Railways, etc.	65,899	81,176	69,506	84,176
<i>By other Agencies.</i>				
District Board, Calcutta Corporation, Provincial Government, and Assam Mines Board of Health.	1,309,392	362,473	1,317,669	362,981
Total ...	1,522,701	476,247	1,526,385	479,755

n the districts of Bengal during the year 1922-23.

VACCINATION.				RE-VACCINATION.			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 5 years.		Average annual number of deaths from small-pox during the previous 5 years.	
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.
Under 1 year.	1 year and under years.	Total of all ages.													
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
9,101	21,462	37,496	26	3,993	1,559	246	94.8	39.95	41.9	.04	5.4	68,918	51.3	416	.39
5,224	8,611	14,250	...	2,854	3,084	82	99.9	80.92							
2,189	13,348	19,288	51	1,642	908	23	94.7	55.2	24.08	.2	2.01	21,260	25.4	190	.22
9,480	25,494	39,135	365	12,984	7,711	312	97.5	65.1	48.5	.9	2.2	36,637	37.9	116	.12
20,423	62,145	101,827	1,570	36,015	22,404	2,751	96.9	63.2	47.8	1.4	7.6	94,224	36.3	726	.27
6,359	16,336	25,525	159	1,831	1,355	17	97.6	74.003	29.8	.6	.9	27,580	33.6	341	.37
4,651	9,759	15,232	137	7,466	3,112	931	97.8	41.6	23.5	.08	12.4	24,461	31.4	432	.55
67,927	187,375	252,693	2,308	68,785	40,124	4,472	96.8	58.2	39.4	.8	6.5	273,180	36.8	2,321	.29
9,935	51,714	67,700	769	8,791	4,379	1,314	97.9	50.5	26.07	1.1	15.1	69,461	34.7	542	.27
9,869	7,751	17,063	414	31,577	11,554	3,865	96.8	36.5	31.5	2.3	12.2	47,166	51.9	1,128	1.25
3,204	5,275	8,664	79	4,537	3,229	351	97.4	71.1							
16,446	23,022	40,224	215	5,388	3,520	223	98.8	67.1	40.1	.5	6.9	45,263	32.5	477	.34
13,694	21,584	26,366	492	2,944	1,988	330	96.8	67.5	24.3	1.2	12.8	33,153	29.02	418	.35
287	379	731	77	3,135	1,494	454	77.6	47.6							
7,057	25,232	34,507	36	5,696	3,808	210	99.6	66.8							
5,719	14,962	21,838	10	3,251	2,261	77	99.5	66.8	26.6	.08	2.1	61,424	36.1	261	.15
17,524	29,697	56,582	245	8,097	5,157	205	99.1	63.8	43.4	.4	2.5	54,172	38.1	62	.34
69,284	141,163	220,882	1,945	61,532	30,145	6,285	98.1	49.9							
22,592	38,364	62,993	392	11,994	7,374	851	98.7	61.9							
82,886	179,427	282,775	2,247	73,456	37,520	7,136	98.3	51.97	39.8	.7	9.7	310,630	38.5	2,898	.36
29,187	26,292	47,187	621	11,317	9,413	313	98.01	83.1	28.8	1.2	2.7	74,162	55.9	468	.32
21,944	49,345	78,664	1,841	4,428	3,181	286	99.7	71.8	50.2	2.1	6.4	73,981	45.4	2,337	1.43
12,270	8,888	22,856	25	28,352	11,989	1,561	92.7	39.08	26.8	.1	5.5	32,222	34.9	480	.53
4,781	4,841	11,181	550	5,478	1,994	1,270	95.2	36.4	51.8	4.6	23.1	20,448	80.4	62	.24
5,581	46,589	56,942	1,687	17,506	13,137	1,020	93.5	75.94	28.1	2.7	5.8	99,705	39.8	2,101	.84
1,718	15,154	20,815	429	2,014	1,083	127	95.3	59.7	21.1	1.9	6.3	30,869	29.9	925	.99
5,651	26,621	38,988	57	1,225	775	99	98.8	63.2							
1,837	8,726	11,141	20	74	51	...	96.1	68.9	24.9	.1	7.6	49,028	36.4	1,786	.95
37,269	19,280	39,048	422	6,921	5,059	674	97.1	72.2	46.1	1.94	9.7	49,350	42.2	258	.37
99,388	188,920	311,780	5,832	77,241	45,712	5,350	94.5	59.1							
1,837	8,726	11,141	20	74	51	...	99.1	68.9	36.2	1.6	6.9	49,266	41.4	8,025	.79
101,223	197,646	322,921	5,652	77,315	45,763	5,350	94.7	59.1							
1,011	7,714	9,681	1,982	4,699	726	2,920	82.3	15.7							
4,921	55,878	66,741	641	29,819	13,457	1,118	96.3	65.2	30.4	8.4	10.04	92,801	33.2	1,329	.44
11,812	96,739	139,743	2,134	73,877	58,422	3,738	95.95	79.1	42.08	1.3	8.06	174,011	36.9	1,849	.39
3,227	28,274	35,296	1,218	12,189	6,295	2,642	95.7	52.5	20.7	2.9	21.6	94,273	42.7	563	.25
2,126	20,347	31,832	1,591	4,789	3,530	341	93.4	73.7	22.4	2.7	7.1	122,580	47.9	184	.97
18,306	163,674	240,552	6,835	95,455	69,074	9,651	94.2	72.3							
4,921	55,878	66,741	641	29,829	13,457	1,118	96.3	65.2	31.3	2.5	9.2	490,065	39.3	3,916	.37
23,227	219,552	307,293	7,476	116,075	82,631	10,769	94.6	71.7							
4,888	44,178	54,825	1,155	18,822	8,845	2,421	94.7	46.9	69.5	19	12.8	59,521	32.1	167	.19
9,391	29,799	44,544	1,368	9,929	4,536	1,994	94.4	69.5	33.5	3.2	11.1	55,154	37.6	259	.17
19,165	99,445	124,674	1,922	27,419	19,819	1,934	95.8	72.2	52.9	1.4	6.9	112,184	41.8	884	.31
92	3,461	6,516	61	4,678	2,006	65	96.6	47.8	49.1	.9	1.3	8,291	47.8	...	...
24,269	176,864	226,529	4,626	59,948	35,197	5,284	95.3	58.7	45.1	1.9	8.9	226,150	38.4	1,201	.22
263,972	827,996	1,256,436	21,416	362,981	220,262	31,142	96.7	60.6							
29,269	102,368	149,775	953	32,598	20,883	1,969	97.6	64.96	36.8	1.5	8.3	1,729,201	38.6	18,362	.41
298,232	930,964	1,397,211	22,379	395,579	241,145	33,111	95.9	69.9							

mary.

Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Rates of successful vaccination per 1,000 of population.	Total cost of department.	Average cost of each successful case.
Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under 1 year.	1 year and under 6 years.			
97.6	64.06	289	612	29,260	102,903	34.9	Rs. A. P. 4,08,269 0 11	Rs. A. P. 0 3 9
93.4	49.3	170	824	18,566	26,794			
98.7	69.6	1,444	1,156	269,972	827,696			
95.7	59.1	1,905	1,044	317,728	937,758			

STATEMENT NO. II—Showing the cost of vaccination in the

Number.	CIRCLES AND DISTRICTS.	European super- sizing officers.	Salary.	Native supervising officers.	Pay.	Paid vaccinators.	Pay.	Messaged vaccinators.	Pay.	Clerks.	Pay.	Peons.	Pay.	Total pay of establishments.
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.	Rs. A. P.
1	Burdwan ... ..		...	10	2,429 11 9	46	11,282 3 4	...	...	...	...	2	302 2 7	14,026 1 8
2	Birbhum ... ..		...	4	2,536 9 0	32	2,582 2 7	...	...	...	...	...	...	5,418 11 7
3	Bankura ... ..		...	3	1,447 0 0	34	2,071 2 0	...	...	...	...	...	...	3,518 2 0
4	Midnapur ... ..		...	7	3,078 4 8	56	10,971 3 5	...	...	...	...	...	...	14,049 8 1
5	Hooghly ... ..		...	4	1,864 6 0	45	4,109 2 3	...	...	...	...	...	...	5,973 8 2
6	Howrah ... ..		...	3	1,716 13 0	19	2,651 15 6	...	...	...	...	...	...	4,368 12 6
	Total of Burdwan Division.		...	31	13,082 12 5	272	33,968 13 1	...	...	...	...	2	302 2 7	47,334 12 1
	<i>Presidency Division.</i>													
7	24 Parganas ... ..		...	9	4,510 1 0	83	5,816 7 2	...	...	...	...	...	...	10,326 8 2
8	Bengal Vaccine Depôt.		...	7	13,107 4 6	...	...	...	...	1	755 7 8	2	389 15 0	14,252 11 2
9	Calcutta ... ..		...	14	8,880 0 0	48	16,062 0 0	...	...	...	...	29	3,065 0 0	28,008 0 0
10	Nadia ... ..		...	6	2,455 0 0	72	1,148 8 2	80	...	...	...	...	...	3,603 8 2
11	Murshidabad ... ..		...	5	2,200 1 10	54	5,687 9 4	13	318 12 0	...	...	...	...	8,208 7 2
12	Jessore ... ..		...	6	2,652 13 4	88	2,006 10 9	86	99 0 0	...	...	...	...	4,759 8 1
13	Khulna ... ..		...	4	1,880 0 0	49	6,450 3 10	...	...	...	...	...	...	8,319 3 10
	Total of Presidency Division.		...	51	35,666 4 8	393	37,180 7 3	179	417 12 0	1	755 7 8	31	3,655 15 0	77,475 14 7
	<i>Rajshahi Division.</i>													
14	Rajshahi ... ..		...	4	2,129 11 0	60	4,958 14 0	...	...	...	...	...	...	8,088 9 0
15	Dinajpur ... ..		...	4	1,791 15 0	70	8,233 9 0	...	...	...	...	...	...	10,125 8 0
16	Jalpaiguri ... ..		...	4	1,734 13 0	29	4,109 2 1	...	...	...	...	...	...	5,844 0 1
17	Darjeeling ... ..		...	4	1,770 0 0	16	2,216 2 0	...	...	...	...	...	...	3,986 2 0
18	Rangpur ... ..		...	5	2,202 0 0	60	7,669 0 0	...	...	...	...	...	...	9,871 0 0
19	Bogra ... ..		...	3	1,549 2 0	21	3,445 0 5	...	...	...	...	...	...	4,994 2 5
20	Pabna ... ..		...	3	1,586 2 6	32	3,393 13 6	32	...	...	...	...	...	4,980 0 0
21	Madda ... ..		...	2	1,120 0 0	26	3,870 0 3	...	...	...	...	...	...	4,990 0 3
	Total of Rajshahi Division.		...	28	13,973 11 6	244	38,925 10 3	32	...	...	...	...	...	52,909 5 9
	<i>Dacca Division.</i>													
22	Dacca ... ..		...	5	2,205 4 0	20	819 1 5	78	...	...	...	...	...	3,024 5 5
23	Mymensingh ... ..		...	7	2,442 8 3	351	10,254 15 10	...	...	...	...	...	...	12,698 8 1
24	Fariápur ... ..		...	5	2,230 0 0	20	3,807 14 5	...	...	...	...	...	...	6,046 14 5
25	Bakarganj ... ..		...	5	2,307 7 0	40	3,143 0 8	...	...	...	...	...	...	5,449 7 8
	Total of Dacca Division.		...	22	10,285 3 3	241	18,025 0 4	78	...	...	...	...	...	28,210 3 7
	<i>Chittagong Division.</i>													
26	Chittagong ... ..		...	(a) 4	1,580 0 0	51	6,766 2 2	...	...	...	...	...	...	8,346 2 2
27	Noskhali ... ..		...	4	1,944 0 0	61	2,712 5 9	...	...	...	...	...	...	4,656 5 9
28	Tippera ... ..		...	4	1,961 0 0	102	8,067 2 0	...	...	...	...	...	...	10,028 2 0
29	Chittagong Hill Tracts.		...	3	1,730 0 0	11	1,261 3 0	...	...	...	...	...	...	2,991 3 0
	Total of Chittagong Division.		...	15	7,215 0 0	226	18,806 12 11	...	...	...	...	...	...	26,021 12 11
	Total of Vaccination Circles.		...	147	80,222 15 10	1,446	1,46,376 11 10	289	417 12 0	2	755 7 8	33	3,759 1 7	3,32,132 0 11
30	Establishments of the Assistant Directors of Public Health.	4	43,015 15 8	...	...	...	...	...	...	5	4,415 13 0	7	1,162 5 0	48,693 1 8
31	Total of the Presi- dency.	4	43,015 15 8	147	80,222 15 10	1,446	1,46,376 11 10	289	417 12 0	7	5,190 4 8	60	4,922 6 7	2,80,735 2 7
32	Municipalities ... ..		...	6	1,819 9 6	145	25,912 0 9	...	...	...	...	1	204 0 0	27,935 10 3
33	Railways, Gardens, etc.		...	...	...	...	...	...	...	...	...	...	...	...
34	Jails ... ..		...	...	...	25	...	...	...	...	...	...	...	...
	GRAND TOTAL	4	43,015 15 8	153	82,042 9 4	1,616	1,72,888 12 7	289	417 12 0	5	5,190 4 8	41	5,126 6 7	3,08,690 12 10

(a) One Sub-Inspector of Vaccination was engaged by District Board from 1st April to 4th July 1922.

districts of Bengal during the year 1922-23.

Travelling allowances.	CONTINGENCIES.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities and Railways.	Native States.	Total.	Number of successful vaccinations and revaccinations.	Average cost of each successful case.
	Cost of lymph.	Other contingencies.									
16	17	18	19	20	21	22	23	24	25	26	27
Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	...	Rs. A. P.	Rs. A. P.	...	...	Rs. A. P.	...	Rs. A. P.
2,785 4 0	...	1,185 3 11	17,946 9 7	...	...	17,946 9 7	...	...	17,946 9 7	36,299	0 5 1
795 15 0	...	40 7 0	6,255 1 7	...	3,322 8 0	3,292 9 7	...	...	6,255 1 7	20,196	0 4 11
852 10 6	...	45 8 6	4,417 5 0	...	2,200 10 6	2,116 10 6	...	...	4,417 5 0	48,846	0 1 6
2,746 0 5	...	441 4 3	17,246 12 9	...	5,816 8 10	11,430 3 11	...	...	17,246 12 9	124,231	0 2 2
1,999 5 6	7,972 13 9	...	3,562 11 6	4,109 2 3	...	...	7,972 13 9	26,889	0 4 9
899 0 0	...	80 9 6	5,348 6 0	...	2,115 13 0	2,232 9 0	...	...	5,348 6 0	18,345	0 4 7
10,089 3 5	...	1,743 1 2	59,187 0 8	...	15,479 3 10	49,757 12 10	...	...	59,187 0 8	292,797	0 3 2
2,302 5 0	...	329 1 4	12,857 14 6	...	6,712 6 0	6,145 8 6	...	...	12,857 14 6	72,095	0 2 10
...	...	11,947 11 0	36,299 6 2	...	36,299 6 2	...	...	...	36,299 6 2	...	...
1,324 0 0	2,000 0 0	11,730 0 0	42,962 0 0	...	...	...	42,962 0 0	...	42,962 0 0	2,617	1 8 0
2,529 6 0	...	201 2 9	6,334 0 11	...	4,984 6 0	1,349 10 11	...	...	6,334 0 11	55,837	0 1 9
3,584 2 10	...	202 0 0	11,972 10 0	...	4,601 11 3	7,370 14 9	...	...	11,972 10 0	49,579	0 4 8
1,655 15 1	...	242 11 6	6,658 2 8	...	4,498 12 5	2,249 6 3	...	...	6,658 2 8	62,414	0 1 8
1,152 6 0	9,471 9 10	...	3,012 6 0	6,459 3 10	...	...	9,471 9 10	61,749	0 2 5
12,328 2 11	2,000 0 0	34,652 10 7	1,26,456 12 1	...	59,919 15 10	22,574 12 3	42,962 0 0	...	1,26,456 12 1	321,296	0 6 2
1,524 8 0	9,613 1 0	...	3,654 2 0	5,958 14 0	...	...	9,613 1 0	56,699	0 2 8
1,569 1 0	...	232 8 0	11,918 1 0	...	3,352 0 0	8,566 1 0	...	...	11,918 1 0	81,845	0 2 3
1,116 4 3	...	294 12 10	7,255 1 2	...	2,157 0 0	5,098 1 2	...	...	7,255 1 2	23,935	0 3 5
3,644 0 0	...	68 0 0	7,698 2 0	...	3,861 13 6	3,836 4 6	...	...	7,698 2 0	12,175	0 9 4
2,059 7 3	...	420 0 0	12,549 7 3	...	4,316 7 2	8,234 0 0	...	...	12,549 7 3	79,079	0 2 10
696 2 0	...	80 9 3	5,779 13 8	...	2,245 4 0	3,535 9 8	...	...	5,779 13 8	21,878	0 4 2
987 6 6	...	62 11 0	6,039 1 6	...	2,573 9 0	3,466 8 6	...	...	6,039 1 6	47,054	0 2 0
829 12 6	...	55 9 9	5,875 6 6	...	1,949 12 6	3,925 10 0	...	...	5,875 6 6	44,117	0 2 1
12,417 9 6	...	1,314 2 10	66,701 2 1	...	24,110 1 3	42,591 0 10	...	...	66,701 2 1	368,694	0 2 11
1,322 5 6	...	205 15 9	4,454 10 8	...	3,427 9 6	995 1 2	...	...	4,452 10 8	80,606	0 0 9
1,853 0 0	15,551 8 1	...	5,296 8 3	10,254 15 10	...	...	15,551 8 1	1,98,166	0 1 3
1,572 5 0	...	35 0 0	7,654 3 5	...	3,846 5 0	3,807 14 5	...	...	7,654 3 5	45,691	0 2 8
1,541 15 0	...	114 3 0	7,196 9 8	...	3,039 6 0	3,257 3 8	...	...	7,196 9 8	55,362	0 2 1
6,189 9 6	...	255 2 9	31,594 15 10	...	16,529 12 9	18,315 3 1	...	...	34,554 15 10	389,824	0 1 5
1,325 6 9	...	137 15 0	9,829 7 11	...	2,778 15 7	7,050 8 4	...	...	9,829 7 11	63,670	0 2 5
1,324 11 0	...	137 0 0	6,028 0 0	...	3,248 11 0	2,779 5 9	...	...	6,028 0 0	49,089	0 1 11
1,771 15 0	...	267 6 0	12,962 7 0	...	3,731 15 0	8,230 8 0	...	...	12,962 7 0	1,44,484	0 1 4
1,870 12 0	...	30 0 0	4,891 15 0	...	4,891 15 0	...	...	...	4,891 15 0	8,322	0 9 2
6,292 12 9	...	587 5 0	32,811 14 8	...	14,652 8 7	18,159 6 1	...	...	32,811 14 8	2,65,756	0 1 11
47,327 6 1	2,000 0 0	38,652 6 4	3,20,911 13 4	...	1,33,651 10 3	1,43,398 3 1	42,962 0 0	...	3,20,911 13 4	1,638,356	0 3 1
8,464 4 9	...	577 0 6	57,664 6 11	...	57,664 6 11	...	...	...	57,664 6 11	...	...
56,651 10 10	2,000 0 0	39,279 6 10	3,77,676 4 3	...	1,91,316 1 2	1,43,798 3 1	42,962 0 0	...	3,77,676 4 3	16,3,356	0 3 8
611 12 0	...	2,045 6 5	30,592 12 8	...	...	(c) 329 0 0	30,253 12 8	...	30,592 12 8	74,476	0 6 7
...	8,548	...
...	17,906	...
66,303 6 10	2,000 0 0	41,274 13 3	4,98,269 0 11	...	1,91,316 1 2	1,43,737 3 1	73,215 12 8	...	4,98,269 0 11	17,38,386	0 3 9

(b) This amount includes the grant of Rs. 25,000 sanctioned by Government in the Local Self-Government Department letter Nos. 61-65 P. H., dated the 11th January 1923.

(c) From Cantonment Funds.

STATEMENT No. III—Showing particulars of vaccination performed by vaccinators attached to Municipalities, Dispensaries, etc., in the Presidency of Bengal during the year 1922-23.

Number.	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 RE-VACCINATED.			PERCENTAGE OF SUCCESSFUL CASES IN WHICH RESULTS WERE KNOWN.		PERCENTAGE OF UNKNOWN CASES TO TOTAL CASES.	
						Total.	Successful.			Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
							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	18
1	Bardham	6	7	5,643	806	3,007	1,057	2,126	2,822	...	1,757	883	...	97.8	50.2	...	...
2	Birbhum	1	1	403	403	100	5	101	103	...	294	178	...	100	69.5	...	...
3	Bankura	3	3	3,524	1,175	2,192	207	1,439	2,053	11	1,332	254	58	93.6	19.06	5	4.3
4	Midnapur	7	9	3,801	422	2,219	495	1,244	2,146	...	1,582	1,015	171	96.7	64.1	...	19.8
5	Hoochly	10	12	6,567	547	5,326	1,789	2,926	5,118	80	1,241	839	8	96.99	47.6	1.5	6
6	Howrah	2	7	4,947	706	3,832	1,724	1,802	3,574	118	1,115	298	88	93.2	26.7	3.08	7.8
7	24-Parganas	28	35	20,440	524	16,661	6,168	9,361	16,206	100	3,887	2,019	284	97.2	51.9	6	7.3
8	Nadia	9	9	3,818	424	2,456	677	1,475	2,359	69	1,376	447	287	91.9	32.4	2.8	20.8
9	Murshidabad	6	7	4,129	589	2,359	585	1,473	2,132	58	1,670	820	133	91.3	43.8	2.6	7.1
10	Jessore	3	3	426	142	364	81	263	364	...	62	31	1	100	50	...	1.6
11	Khulna	3	3	866	288	727	177	504	719	2	143	81	9	98.9	56.6	1	6.2
12	Rajshahi	2	3	10,977	3,629	1,648	465	1,636	1,544	76	9,329	5,657	1,639	93.6	54.2	4.6	17.6
13	Dinajpur	1	1	627	627	326	129	188	313	...	301	95	79	96	31.5	...	26.2
14	Jalpaiguri	1	1	391	391	218	41	143	197	...	173	117	2	90.3	67.6	...	1.1
15	Darjeeling	2	2	4,509	2,254	1,197	723	322	1,191	15	3,213	1,359	356	98.6	28	1.2	10.7
16	Rangpur	1	2	576	288	382	64	286	374	...	194	124	9	97.9	69.07	...	4.6
17	Bogra	2	2	578	289	451	141	251	412	16	127	51	32	91.3	40.1	3.5	25.2
18	Pabna	2	2	1,437	718	1,343	412	715	1,220	3	194	59	28	98.1	25.7	2	14.4
19	Malda	3	3	1,317	439	1,014	463	548	1,012	...	305	63	14	99.8	20.6	...	4.5
20	Dacca	3	9	7,969	885	5,668	1,219	3,544	4,927	222	2,423	372	567	85.1	19.3	3.9	23.9
21	Mymensingh	8	6	4,536	756	3,391	421	2,541	3,160	133	1,145	442	134	93.1	38.07	3.9	11.7
22	Faridpur	2	2	1,695	892	1,302	221	868	1,185	15	396	96	137	91.91	24.2	1.1	24.6
23	Bakerganj	6	5	1,887	377	1,279	406	499	1,193	37	608	122	128	93.2	21.7	2.8	21.05
24	Chittagong	3	3	3,492	1,134	1,234	190	863	1,133	45	2,216	449	576	91.8	20.2	3.6	25.9
25	Noakhali	1	1	693	693	393	81	279	370	2	309	133	57	94.1	44.3	5	19
26	Tippura	3	3	3,158	1,053	2,670	497	1,729	2,281	61	682	258	165	85.4	37.8	2.2	24.1
	Total	116	145	98,326	677	62,468	18,369	36,575	58,903	1,963	36,365	15,573	4,958	94.2	42.8	1.7	13.6
	Vaccinations performed by—																
	Railways	...	...	5,469	...	1,212	...	...	1,048	69	4,257	1,530	...	86.4	35.9	5.6	...
	Tea Gardens	...	...	444	...	379	134	212	267	1	65	43	2	96.9	66.1	2	3.07
	Factories	...	...	7,296	...	5,100	...	...	4,350	...	2,196	1,210	...	85.2	55.1	...	...
	Steamers	...	...	12,997*	...	...	...	...	...	...	12,997	...	12,997	...	...	...	100
	Jail-operations	...	25	28,643	1,145	347	3	7	252	62	28,296	16,754	3,216	72.6	59.2	17.8	11.3
	GRAND TOTAL	116	170	153,075	746	69,506	18,506	36,794	64,920	1,165	84,176	35,110	21,173	92.4	49.3	1.7	25.1

* Includes one vaccinator engaged for two months by Budge-Budge Municipality.

* No details being available these cases have been excluded from the number of total operations while calculating average and percentage in columns 6 and 16 of the statement.

COMPARATIVE STATEMENT No. IV—Showing the number of persons primarily vaccinated and the number of those persons who were successfully vaccinated in each of the undermentioned official years.

ESTABLISHMENT.	1913-14.		1914-15.		1915-16.		1916-17.		1917-18.		1918-19.		1919-20.		1920-21.		1921-22.		1922-23.	
	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.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Government	7,085	7,032	6,387	6,225	8,052	7,934	7,466	7,128	7,473	7,226	7,261	7,108	6,846	6,432	6,364	6,432	6,489	6,424	6,649	6,516
Municipal	84,489	82,601	86,220	84,682	74,792	71,457	70,724	70,374	82,437	78,439	61,729	57,328	114,722	110,026	68,592	66,133	76,194	73,253	73,473	75,305
Local Fund	14,677	14,315	12,290	12,006	141,839	131,919	143,874	144,909	191,319	188,933	287,332	277,372	476,103	462,171	602,879	581,886	796,737	770,282	1,283,340	1,232,837
Dispersions, etc.	2,788	2,532	1,294	1,230	2,438	2,140	2,084	1,802	7,683	6,915	6,419	5,973	13,592	12,599	7,892	7,431	5,793	5,294	7,038	6,917
Work done by ex-locators	1,487,815	1,438,377	1,076,427	995,026	1,030,972	1,034,570	1,065,434	1,099,387	1,031,546	1,028,332	923,479	917,348	1,031,925	1,096,345	728,370	708,842	378,464	367,079	144,210	140,775
Total	1,566,845	1,544,687	1,122,589	1,067,809	1,258,163	1,221,070	1,300,652	1,214,361	1,349,372	1,306,935	1,286,429	1,265,120	1,641,449	1,596,613	1,414,437	1,370,764	1,263,677	1,222,312	1,322,791	1,462,131

Statement No. IV—Showing the number of persons primarily vaccinated and the number of those persons who were successfully vaccinated in each of the undermentioned official years.

STATEMENT NO. VII—Showing the protection afforded to infants in each town in the Presidency of Bengal during the year 1922-23.

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 1923.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
BURDWAN ...	Burdwan ...	285	25	452	1st July 1883.
	Kalna ...	174	52	72	1st " "
	Katwa ...	88	11	80	1st " "
	Dainhat ...	91	23	105	1st " "
	Raniganj ...	262	50	200	1st " "
	Asansol ...	385	49	148	14th September 1910.
	Total ...	1,285	210	1,057	
BIRBHUM ...	Suri ...	50	7	5	1st July 1881.
BANKURA ...	Bankura ...	509	64	178	1st " 1883.
	Vishnupur ...	476	61	5	1st " "
	Sonamukhi ...	327	43	24	6th June 1892.
	Total ...	1,312	168	207	
MIDNAPUR ...	Midnapur ...	602	50	213	1st July 1883.
	Ghatal ...	300	41	20	1st " "
	Kharar ...	152	17	47	16th August 1889.
	Chandrakona ...	142	27	37	1st July 1883.
	Ramjibanpur ...	165	29	1	1st " "
	Khirpai ...	96	17	40	1st " "
	Tamluk ...	130	13	47	1st " "
	Total ...	1,587	194	405	
HOOGHLY ...	Hooghly-Chin-sura.	853	131	1,004	1st September 1881.
	Bansberia ...	81	24	63	1st July 1883.
	Arambagh ...	152	29	42	11th February 1889.
	Serampur ...	750	107	341	1st March 1883.
	Uttarpara ...	177	18	33	1st April " "
	Kotrung ...	120	21	30	1st July " "
	Baidyabati ...	462	57	106	1st " " "
	Bhadreswar ...	300	44	112	1st " " "
	Rishra-Konnagar.	409	69	55	(It formerly formed a part of the Serampur Municipality.)
	Champdani ...	251	49	3	(It formed a part of the Baidyabati and Bhadreswar Municipalities.)
	Total ...	3,555	549	1,789	
HOWRAH ...	Howrah ...	4,912	1,180	1,672	1st April 1882.
	Bally ...	415	51	52	1st October 1884.
	Total ...	5,327	1,231	1,724	
	Total of Burdwan Division.	13,116	2,359	5,187	
24-PARGANAS.	Cossipur-Chitpur.	912	142	739	1st October 1883.
	Manicktala ...	936	484	1,305	1st " "
	South Suburban ...	902	126	603	1st " "
	Tollyganj ...	415	28	357	1st " "
					(It formerly formed a part of the South Suburban 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 1923.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
24-PARGANAS— <i>concl'd.</i>	Garden Reach	759	152	801	1st October 1883. (It formerly formed a part of the South Suburban Municipality.)
	Budge Budge	280	41	38	18th February 1902.
	Baranagar ...	742	144	198	1st October 1883.
	Kamarhati ...	393	60	184	1st " " (It formerly formed a part of the Baranagar Municipality.)
	Rajpur ...	258	34	65	1st October 1883.
	Baruipur ...	115	20	96	1st " "
	Jaynagar ...	134	25	8	1st " "
	North Dum-Dum.	105	19	22	1st " "
	South Dum-Dum.	391	67	134	1st " "
	Khardah ...	92	5	54	} 1st " " (They formerly formed parts of the South Barrackpur Municipality.)
	Barrackpur, including Barrackpur Cantonment.	176	21	193	
	Panihati ...	175	28	29	
	North Barrackpur.	374	56	120	1st October 1883.
	Titagarh ...	784	183	250	1st " " (It formerly formed a part of the South Barrackpur Municipality.)
	Garulia ...	112	6	17	1st October 1883. (It formerly formed a part of the North Barrackpur Municipality.)
	Naihati ...	414	43	298	1st October 1883.
	Halisahar ...	114	11	24	} 1st " " (They formerly formed parts of the Naihati Municipality.)
	Kanchrapara ...	190	10	12	
	Bhatpara ...	815	93	66	1st October 1893.
	Barasat ...	98	2	3	1st " "
Gobardanga ...	78	3	43	1st " "	
Basirhat ...	494	79	307	1st " "	
Baduria ...	210	16	166	1st " "	
Taki ...	153	28	46	1st " "	
Total ..		10,631	1,926	6,168	
CALCUTTA ...	Calcutta ...	18,176	5,142	9,060	1880.
NADIA ...	Krishnagar ...	334	21	129	1st October 1883.
	Nadia ...	295	47	43	1st " "
	Ranaghat ...	222	39	147	1st " "
	Birnagar ...	45	13	19	1st " "
	Santipur ...	963	140	103	1st " "
	Chakdaha ...	80	12	28	28th January 1887.
	Kushtia ...	154	17	84	1st October 1883.
	Kumarkhali ...	80	23	61	1st " "
Meherpur ...	94	16	53	1st " "	
Total ...		2,267	328	677	

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 1903.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
MURSHIDABAD.	Berhampur ...	485	67	130	1st October 1883.
	Murshidabad	253	48	56	1st " "
	Azimganj ...	251	56	36	1st " " (It formerly formed a part of the Murshidabad Municipality.)
	Kandi ...	278	35	181	1st October 1883.
	Jangipur ...	348	22	105	1st " "
	Dhulian ...	275	16	77	26th June 1910.
	Total ...	1,890	244	585	
JESSORE ...	Jessore ...	92	11	26	1st October 1883.
	Kotchandpur	154	23	25	1st February 1884.
	Maheshpur ...	40	4	30	1st October 1883.
	Total ...	286	38	81	
KHULNA ...	Khulna ...	184	25	35	1st July 1887.
	Satkhira ...	129	13	97	7th " 1883.
	Debhatta ...	98	22	45	1st October 1883.
	Total ...	411	60	177	
	Total of Presidency Division.	33,661	7,738	16,748	
RAJSHAHI ...	Rajshahi ...	710	82	465	1st June 1881.
	Nator ...	156	34	...	1st January 1881.
	Total ...	866	116	465	
DINAJPUR ...	Dinajpur ...	83	10	120	1st January 1887.
JALPAIGURI	Jalpaiguri ...	181	20	41	1st " "
DARJEELING	Darjeeling ...	571	55	468	1st September 1884.
	Kurseong ...	223	26	255	1st January 1887.
	Total ...	794	81	723	
RANGPUR ...	Rangpur ...	333	54	64	1st July 1881.
BOGRA ...	Bogra ...	226	54	119	1st January 1882.
	Sherpur ...	113	23	22	1st October 1884.
	Total ...	339	77	141	
PABNA ...	Pabna ...	166	33	87	1st February 1882.
	Sirajganj ...	652	86	355	1st January 1887.
	Total ...	818	119	442	

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 1923.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
MALDA ...	English Bazar	312	25	51	1st March 1883.
	Malda ...	71	14	11	1st April 1887.
	Nawabganj ...	323	32	401	12th May 1904.
	Total ...	706	71	463	
	Total of Rajshahi Division.	4,120	498	2,459	
DACCA ...	Dacca ...	3,510	831	1,016	1st July 1887.
	Narayanganj ...	918	214	203	1st " "
	Total ...	4,428	1,045	1,219	
MYMEN-SINGH.	Mymensingh	437	64	19	1st October 1887.
	Muktagacha ...	115	16	12	1st " "
	Netrakona ...	261	42	61	20th January 1890.
	Jamalpur ...	480	85	88	1st October 1887.
	Sherpur ...	528	90	115	1st " "
	Kishorganj ...	405	51	104	1st " "
	Bajitpur ...	145	23	6	1st " "
	Tangail ...	206	29	16	19th February 1890.
	Total ...	2,577	400	421	
FARIDPUR ...	Faridpur ...	285	31	115	1st October 1887.
	Madaripur ...	586	49	106	1st " "
	Total ...	871	80	221	
BAKARGANJ	Barisal ...	226	25	12	1st October 1887.
	Jhalakati ...	42	13	...	1st " "
	Nalchiti ...	38	5	3	1st " "
	Pirojpur ...	520	40	382	1st January 1890.
	Patuakhali ...	131	28	9	25th January 1894.
	Bhola ...	56	5	...	8th November 1922.
	Total ...	1,013	116	406	
	Total of Dacca Division.	8,889	1,641	2,267	
CHITTAGONG	Chittagong ...	1,013	183	171	1st April 1887.
	Cox's Bazar ...	85	6	19	14th November 1892.
	Total ...	1,098	189	190	
TIPPERA ...	Comilla ...	348	31	90	1st April 1887.
	Brahmanbaria	644	116	319	1st " "
	Chandpur ...	216	30	88	22nd July 1898.
	Total ...	1,208	177	497	
NOAKHALI ...	Sudbaram ...	96	17	81	1st April 1887.
	Total of Chittagong Division.	2,402	383	768	
	Total for the Presidency.	62,188	12,619	27,429	

PROVINCIAL STATEMENT A—*Showing the degree of protection afforded to infants during the year 1922-23.*

DISTRICTS.	Rural population among which vaccinations were performed.	Estimated births at 28'9 per 1,000 of population being the birth-rate of the Presidency during the year 1922.	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 during 1921-22.
1	2	3	4	5	6	7	8
Malda ...	955,830	26,763	3,874	22,889	27,360	(c)1,195·3	1,061·76
Darjeeling ...	254,045	7,113	1,618	5,495	4,781	870·06	818·81
Nadia ...	1,390,704	38,939	9,645	29,294	19,700	672·4	530·09
Rajshahi ...	1,457,037	40,797	10,771	30,026	20,187	672·3	527·08
Dinajpur ...	1,627,328	45,565	11,236	34,329	21,944	639·2	517·00
Jalpaiguri ...	921,749	25,808	5,681	20,127	12,270	609·6	503·63
Murshidabad ...	1,182,983	33,123	8,293	24,830	13,691	559·4	571·54
Khulna ...	1,421,116	39,791	8,257	31,534	17,524	555·7	513·38
Burdwan ...	1,343,185	37,609	8,695	28,914	14,425	498·8	590·37
Bankura ...	964,487	27,005	6,727	20,278	9,480	467·5	518·34
Midnapur ...	2,595,071	72,661	14,086	58,575	20,423	348·6	324·25
Jessore ...	1,700,924	47,625	9,614	38,011	12,776	336·1	394·87
Hooghly ...	900,802	25,222	4,961	20,261	6,359	313·8	271·39
Tippera ...	2,678,627	75,001	6,982	68,019	19,165	281·7	180·04
Noakhali ...	1,465,071	41,021	6,074	34,947	9,391	268·7	288·60
Howrah ...	778,893	21,809	4,058	17,751	4,651	262·01	345·74
Pabna ...	1,344,633	37,649	6,762	30,887	7,388	239·1	141·87
Chittagong Hill Tracts (a)	173,243	4,850	910	3,940	925	234·7	254·70
24-Parganas ...	1,998,318	55,952	7,924	48,028	9,935	206·8	180·49
Chittagong ...	1,570,760	43,981	8,215	35,766	4,588	136·6	120·93
Birbhum ...	838,655	23,482	6,198	17,284	2,189	126·6	49·46
Rangpur ...	2,488,778	69,685	16,091	53,594	5,581	104·1	60·44
Mymensingh ...	4,710,669	131,898	9,180	122,718	11,812	96·2	125·19
Dacca ...	2,975,915	83,325	12,567	70,758	5,932	83·8	60·63
Bogra ...	1,032,306	28,904	5,245	23,659	1,712	72·3	246·95
Faridpur ...	2,202,783	61,677	9,940	51,737	3,327	64·3	62·76
Bakarganj ...	2,563,849	71,787	16,609	55,178	2,156	39·07	44·24
Total of Rural Circles	43,597,755	1,219,042	220,213	998,829	290,172	290·4	269·11
Calcutta ...	907,851	(b)18,170	5,142	13,034	9,060	695·1	697·86
Muffassal Municipalities, etc.	218,930	(b)44,012	7,477	36,535	18,506	506·5	594·49
GRAND TOTAL ...	46,695,536	1,281,224	232,832	1,048,398	317,738	303·01	284·45

(a) In the Chittagong Hill Tracts the registration of births and deaths is not carried out. The number of deaths among infants has been calculated at the rate of infant mortality (187·7) obtaining in the Presidency during 1922.

(b) The number of births in Calcutta and muffassal municipalities are the actual figures recorded and not calculated at the rate of 28'9 the birth rate of the Presidency during 1922.

(c) If the actual birth figure for Malda is taken for calculation the proportion of persons successfully vaccinated per 1,000 of population as shown in column 7 would be 967·5.

No.	Name	Age	Sex	Religion	Profession	Marital Status	Address
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GOVERNMENT OF BENGAL.

LOCAL SELF-GOVERNMENT DEPARTMENT.

Public Health.

CALCUTTA, THE 1ST MARCH 1924.

RESOLUTION—No. 401P.H.

READ—

The Report of the Director of Public Health, the Sanitary Board and the Chief Engineer, Public Health Department, for the year 1922.

READ ALSO—

The twelfth triennial report on vaccination in Bengal for the years 1920-21, 1921-22 and 1922-23.

1. **Public Health.**—(Statistical, Epidemiological and General Public Health Administration.)

Population.—For the purposes of this review the total population of Bengal, excluding the Chittagong Hill Tracts, is taken as 46,522,293 (1921 Census).

2. **Birth-rate and Death-rate.**—In 1922, the total number of births recorded in Bengal was 1,275,614 against 1,301,001 in the preceding year, while the number of recorded deaths fell from 1,403,030 in 1921 to 1,173,246 in 1922.

The provincial birth-rate in 1922 was 27·4 per mille as compared with 28·0 in 1921 and the quinquennial average of 30·2. The birth-rate of 1922 was the lowest since the year 1892, the first year of general birth registration throughout Bengal. Only one other province in India, viz., the North-West Frontier Province, recorded a lower birth-rate (23·7 per mille) during the year. The birth-rate of Bengal for 1922 was 2·1 per cent. below that of 1921 and 12·5 per cent. below the average of the previous ten years. The Director of Public Health has pointed out that the trend of the birth-rate has been going down steadily during the last sixteen years, and he is of opinion that "the declining birth-rate is suggestive of pressure on subsistence resulting from the growth of population outstripping that of production." An important factor contributing to the lowering of the birth-rate in Bengal is the large influx of the surplus population of other provinces which materially affects the economic life of the local population. In this connection the Director of Public Health makes the following observations :—

"For many years past, Bengal has been accommodating a portion of the surplus population of a number of other provinces. The influx of large numbers of these people into a country, much of which is already more densely crowded than any other rural tract in the world, must serve as an effective check to the growth of the indigenous population".

There are other contributory factors at work, such, for example, as the gradual postponement of marriage to a later age, but the Director of Public Health is of opinion that economic conditions are the main cause of the declining birth-rate and that the serious depression through which the country has been passing since the middle of 1918 is primarily responsible for the great diminution of births which has followed and which has been specially marked in the year under report.

The provincial death-rate in 1922 was 25·2 per mille as compared with 30·1 in 1921, the quinquennial average being 31·3 per mille. The death-rate of 1922 was lower than that of any year since 1890. The Director of Public

Health points out that the low death-rate, while partly due to improved economic conditions resulting from the relatively favourable harvest of 1921-22, was largely due to the natural reaction following upon the excessive mortality and the low birth-rates of the previous years. In fact the year 1922 was generally noticeable for low death-rates throughout India. Of the other provinces only two, viz., Assam and North-West Frontier Provinces, recorded a death-rate higher than Bengal. As was pointed out last year, it is the rate of natural increase (of births over deaths) and not the death-rate alone which affords the best evidence of a country's health, and judged by this standard Bengal compared very unfavourably with most of the other provinces, two only, viz., Assam and the North-West Frontier Province, showing a small rate of increase.

Comparing the divisional birth-rates of the last few years it is observed that while there was an improvement in the Burdwan and Presidency Divisions, a considerable diminution of births occurred in the other three divisions. The divisions which show a reduced birth-rate are those specially interested in the cultivation of jute, and in the opinion of the Director of Public Health the relatively low price obtained by the cultivator for this commodity during the period from 1919 to 1921 has had an unfavourable influence on the birth-rate of all the jute-growing districts.

The Director of Public Health has drawn attention to the interesting fact that contrary to the general belief, mortality goes down when prices go up, and that *vice versa*, mortality rises as prices fall, and he explains that the agriculturist benefits most when he can obtain a reasonable return for the produce he has to sell:

"It will be seen that prices underwent a very sudden fall of over 30 per cent. between the summer of 1920 and the cold weather of 1920-21, and that this change was accompanied by a very great relative rise in mortality. On the other hand, the seasonal change in the price level in 1922 was only about 15 per cent.; in other words, prices were much more stable in the latter year; and co-incidentally with this the corresponding fluctuations of mortality were far smaller than in the former year. The most favourable condition for all classes of the population appears to be when prices are neither unduly high nor unduly low but remain at a more or less stable or fixed position, whereas if they fluctuate widely it is merely the small class of middlemen and speculators who benefit at the expense of both the consumer and the producer; and the alternating periods of relative prosperity and economic stress that result are reflected in the oscillations that occur in the birth and death-rate of the community as a whole."

3. Infant mortality.—In 1922, 239,451 infants died under the age of one year, as compared with 268,162 during the preceding year, the total mortality showing a net reduction of 11·1 per cent. The rate of infant mortality declined from 206 per mille in 1921 to 188 per mille in 1922. An examination of the figures of infant mortality at different age periods reveals the interesting phenomenon that while deaths of infants under one month and under six months actually increased by 5·1 and 5 per cent., the mortality of infants between the ages of 6 and 12 months showed a large reduction (33·8 per cent.). In the opinion of the Director of Public Health the small increase of mortality in 1922 among infants aged one to six months and the greater increase among infants below one month is the direct consequence of the increasing number of births that took place in the later months of the year. A healthy year generally keeps down mortality among grown up infants, while improved economic conditions which follow in its wake help to promote the birth-rate. As births increase, however, the mortality of children under one month also increases under existing conditions.

In 1922 only 2,567 deaths from child-births were reported, but the figure is obviously unreliable, and the Director of Public Health estimates that maternal causes must have been responsible for the death of about 45,000 mothers in Bengal.

As the Director of Public Health has pointed out, with few exceptions the death of a mother during child-birth or shortly afterwards leads also to the death of her child, and it is obvious therefore that there is a great scope in Bengal for work in the sphere of maternal and infant welfare.

As noticed last year, infant and maternal welfare centres have been doing good work for some time in Calcutta and Dacca. A scheme was inaugurated during the year for the training of indigenous village *dais*, and the Minister is glad to learn that several district boards have arranged to start training centres for this purpose. The Asansol Mines Board of Health have set a good example by employing a small number of trained midwives with considerable success, and it is reported that an increasing number of trained midwives have settled down to private practice within the mining area.

The Minister for Local Self-Government hopes that the widespread interest which has recently been aroused in the subject of maternity and child-welfare throughout the province as the result of the National Baby Week Exhibition held under the initiative of Her Excellency the Countess of Lytton will lead to a systematic organization being formed in every district for the training of *dais*, for the education of mothers, and for the formation of baby clinics and maternity welfare centres.

4. **Child mortality.**—Referring to the older children the Director of Public Health has drawn attention to the fact that over 25 per cent. of the total mortality of the province was made up of child deaths as distinguished from infant deaths, and that the aggregate loss of life among children between the ages of one and 15 years is much greater than that of infants.

It is evident that a serious loss is being occasioned to the community by the deaths of so many young children, and the Minister for Local Self-Government is convinced that vigorous efforts must be made to reduce this evil.

In this connection the Minister lays great stress on the value of school hygiene work and is glad to note that work in connection with school hygiene was continued throughout the year and that a systematic inspection of schools and school children is now proceeding in a number of municipalities under the supervision of an Assistant Director of Public Health and a small staff of assistants specially deputed for the purpose. The Director of Public Health reports that of the total number of boys examined no less than 55 per cent. showed physical defects. The Minister hopes that increasing attention will be paid to the health of the school-going population on whom the future prosperity of the province so largely depends.

5. **Registration of Births and Deaths.**—The Director of Public Health has again drawn attention to the continued neglect by municipal authorities in administering the law in regard to birth and death registration. In many towns the machinery of registration is still very defective, and incredibly low figures continue to be reported. In 1922, 71 towns out of 117 returned birth-rates below 20 per mille, while in ten towns the rate was lower than 10 per mille. Dinajpur and Suri reported figures as low as 4·9 and 5·5 per mille, respectively.

In the opinion of the Director of Public Health even in the best of years the healthiest town in Bengal has a death-rate not much below 30 per mille. In 1922, however, 78 towns reported death-rates below 20 per mille, while in 12 towns the recorded death-rate was even lower than 10 per mille, Suri and Garulia returning the absurdly low figures of 4·5 and 4·7 per mille respectively.

The importance of the maintenance of an accurate record of vital statistics for the purposes of public health administration was emphasized in last year's resolution, and the Minister for Local Self-Government once more desires to draw the attention of municipal authorities to the urgent need for an improvement in this direction.

The continued neglect of birth registration in towns is an obstacle to infant and maternal welfare work and reveals the urgent necessity for the appointment of responsible officers as registrars of births and deaths in municipal areas.

6. **Cholera.**—The mortality from cholera was 51,712 in 1922 as compared with 80,547 in 1921, giving a death-rate of 1·1 against 1·7 per mille of the population. It is satisfactory to note that the prevalence of the disease is on the decline, and the Minister is glad to learn that the local bodies and

the general public are beginning to realize that cholera is essentially a preventable disease which can be properly controlled by the adoption of effective sanitary measures. The provision of an adequate and pure water-supply in rural and urban areas is obviously of primary importance in this connection. At the same time the Director of Public Health lays very great stress on the importance of taking preventive measures and of starting an anti-cholera campaign on organized lines in order to check the spread of the disease. As successful examples of measures of this kind he refers to the effective steps taken by the District Board of the 24-Parganas to prevent the occurrence of cholera at the last Ganga Saugor Mela, and the strenuous efforts made by the District Boards of Bogra, Rajshahi and Pabna, assisted by large bands of voluntary workers, for the prevention of cholera in areas which suffered from devastating floods in the latter part of the year. Enquiries made by the Director of Public Health have revealed that there are special centres of infection in various parts of Bengal, and that there are grounds for believing that cholera infection is often spread along lines of communication from other provinces. As he has pointed out, it is within the power of municipalities and district boards in Bengal to reduce cholera mortality to a minimum at a very small expenditure. The experience gained in anti-cholera work in several districts has shown that a reduction in cholera mortality is almost automatically brought about by the appointment of a trained sanitary staff, and the Director of Public Health is confident that not only would cholera mortality be almost entirely checked if a small trained staff were provided for every thana in the province, but that many other diseases of a like infectious nature would also eventually be brought under control as a result of the establishment of an organization of this kind in each district under the direct supervision of the District Health Officer. The Minister for Local Self-Government trusts that this suggestion will meet with careful consideration on the part of local bodies.

7. **Small-pox.**—In 1922 the mortality from small-pox remained comparatively low, being 7,864 as compared with 8,157 in 1921, 36,190 in 1920 and 37,010 in 1919. This periodic decline may be followed in the near future by a recrudescence of the disease, and the Director of Public Health draws the attention of the local bodies to the need for carrying out vaccination measures specially in areas where the infection appears to be localized.

The total number of vaccinations reported in 1922-23 was 2,006,140 as compared with 1,761,626 in 1921-22. Of the total operations, 1,526,385 were recorded as primary and 479,755 as re-vaccinations, against 1,266,551 primary and 495,075 re-vaccinations during the year 1921-22. There was thus during the year 1922-23 an increase of 20·5 per cent. in primary and a decrease of 3·02 per cent. in re-vaccination operations.

During 1922-23 out of 998,829 infants requiring vaccination 290,172 or 29·4 per mille were reported to have been successfully vaccinated in the rural areas, as compared with 271·735 or 269·11 per mille during the previous year. In nine districts, including Calcutta, the protection was said to have been over 500 per mille. In municipal areas 553·3 per mille of the surviving infants were protected in 1922-23 against 627·5 per mille during the previous year.

Free vaccination has now been introduced all over the Presidency, but for want of funds most of the local bodies were unable to appoint an adequate staff of paid vaccinators. In several districts, licensed vaccinators were also employed, while some district boards employed paid vaccinators only for short periods. In the district of Dacca, some of the union boards undertook to provide free vaccination and employed a few paid vaccinators. In 1922-23 Government made a total grant of Rs. 25,000 to district boards for free vaccination.

The Minister desires to call the attention of all local authorities to the likelihood pointed out by the Director of Public Health of a recrudescence of small-pox epidemic in the province in the course of the next 12 or 18 months and trusts that all early cases of small-pox will be carefully watched and that every effort will be made to check the spread of infection by the efficient vaccination of all contacts.

8. **Fever.**—In 1922 the mortality from fever was 885,268 as compared with 1,070,368 in 1921, the death-rate falling to 19·0 per mille, against 23·0 per mille in previous year and the quinquennial average of 24·4 per mille. As usual, deaths from fever represented about 75 per cent. of the total mortality. The reduced fever mortality of 1922 was largely influenced by the improved conditions existing in the post-monsoon period of 1921.

(a) **Malaria.**—Of the febrile diseases, malaria continues to be the most important, the recorded mortality from malarial fever in 1922 being 11·6 per mille against 15·8 per mille in the preceding year. The actual rate of death from malarious fever per mille of population has declined in every districts of the Presidency. But although the number of deaths has shown a decline, sickness has not diminished and a comparison of the mean fever indices for the period of 1920-22 with that in 1912 shows a very large increase in the prevalence of malarial fever in all parts of the Presidency. The classification of mortality returns under the different kinds of fever is still far from accurate, and the recorded malarial death-rate is vitiated in many instances by the inclusion of figures of mortality from pneumonia, tuberculosis, enteric fever, kala-azar and other febrile diseases. The Director of Public Health estimates that "ordinarily, malaria appears to be the direct or indirect cause of from 20 to 33 per cent. of the reported fever deaths."

If to the death-rate caused by malaria be added the physical degeneration of the people among whom it is prevalent, the imperative necessity for a vigorous anti-malarial campaign and for utilising all the available resources of the community for fighting the disease becomes apparent.

The Minister therefore lays great stress on the local bodies initiating the policy of enlisting the services of all the social service organizations in this cause, and in particular of the Central Co-operative Anti-malaria Society, Limited, whose work has been rousing the dormant energies of the rural population and organizing them for taking effective measure not only against malaria but kala-azar and other diseases which present such a menace to the rural population. Government (Ministry of Local Self-Government) will give every possible support to the work of this important organization. The Minister also desires in this connection to impress upon district boards the urgent necessity of organizing the rural population of the province into union boards, so that they may be furnished with an effective machinery for fighting disease by taking preventive measures generally and in particular by providing adequate sources of drinking water supply and maintaining the existing water-supply against pollution.

The Director of Public Health lays great stress on a sufficient use of quinine against malaria for both preventive and curative purposes, and mentions the significant fact that the districts which appear to be least malarious consumed by far the largest proportion of quinine.

Investigations made by the Director of Public Health lead to the conclusion that interference with the natural flow of water across country from field to field, obstruction or silting up of water-courses and any condition which seriously diminishes the supply of water and promotes stagnation either on the surface of the land or in the beds of streams and drainage channels lead to a local increase of malaria. Increase of malaria in parts of Eastern Bengal, which until recently were comparatively free from malaria, is directly attributed to the haphazard construction of embankments which restrict the natural flow of water. On the other hand, experiments made by the Public Health Department in several areas of intense malaria infection, which aim at the restoration of the natural flow of water in stagnant channels and the flushing out of drains, ditches and insanitary tanks, have been attended with successful results, and have definitely led to a reduction in the prevalence of malaria. Reference was made last year to the good results obtained from experiments carried on in the colliery area (Singaran-Toposi) and at Meenglas in the Duars, and to the effect of the Banka Valley scheme in reducing the spleen index in adjacent villages and improving local agricultural conditions. A "flood and flush" scheme was carried out at Jangipur, and the results recorded so far show that there has been a general improvement in the health of the town. A portion of the bed of the Saraswati river has been re-excavated in recent years, and the restoration of the flow in the

channel has had the effect of improving the health of the adjacent villages. There has also been a great diminution of malaria at Kumarkhali where a small scheme has been carried out for flushing out the drains, ditches and hollows in and about the town with an abundant supply of water from the river. The Minister reiterates the policy laid down last year with regard to measures for the abatement of malaria and trusts that local bodies will show their readiness in undertaking projects which aim at the removal of restrictions on natural inundation, the flushing out of swampy areas which breed anopheles, and the general improvement of agriculture.

(b) **Kala-azar.**—The kala-azar survey has been carried out in 13 districts, and up to the present, 23 per cent. of the villages examined have been found infected with kala-azar. The enquiry has served to stimulate general interest in kala-azar, and about 300 medical officers practising in the rural areas have been trained in the diagnosis and treatment of the disease. As a result of this the number of cases of kala-azar admitted into hospitals and dispensaries in Bengal has risen from a total of 4,300 in 1919 to over 18,000 in 1922, which represents an increase of over 70 per cent. on the last year's figures. The Director of Public Health estimates that when investigations have been completed in all parts of Bengal the average incidence of the disease may be found to be as high as in Assam, viz., 2·8 per mille of the total population, which represents roughly 130,000 cases of kala-azar in Bengal. He also refers to pockets of intensive kala-azar infection. The Minister lays very great importance on stamping out this disease in as short a time as possible. As an effective remedial measure has been found, this can be easily effected if a sufficient number of medical men can be encouraged to take part in the work. The Minister is of opinion that the scheme for encouraging medical officers on the subsidy system adopted by the Central Co-operative Anti-malaria Society offers the most economical and efficient method for fighting this disease.

Government (Ministry of Local Self-Government) have in a recent resolution outlined the general line of an effective plan of campaign against kala-azar and have also made substantial grants to district boards towards anti-kala-azar work.

Sanitary Engineering.—A number of municipal water-supply, drainage and sewerage schemes were prepared by the Chief Engineer, Public Health Department. Seven water-works and two sewerage schemes were under construction during the year. Some sanitary works were also carried out on behalf of the Public Works Department at the Bengal Engineering College, Sibpur, and the Kurseong water-supply project was completed. The total capital expenditure on water-supply was Rs. 4,23,601, and the total expenditure on municipal drainage works amounted to Rs. 6,22,015 in 1922. There was no improvement in the general financial position of Government or of the local bodies, and the progress with the execution of sanitary engineering schemes was in consequence hampered.

In 1921 Government (Ministry of Local Self-Government) appointed a committee to enquire into the question of the water-supply of the riparian municipalities on the east bank of the river Hooghly. The committee submitted their report in 1922, and recommended the adoption of cheaper water-supply schemes, based on tube-wells, for the towns lying to the north of Calcutta. Several schemes have accordingly been prepared by the Chief Engineer, Public Health Department, and it is expected that, as soon as funds are available, some at any rate of these schemes will be undertaken by the municipalities concerned. A second committee was appointed during the year to enquire into the question of the water-supply of the municipalities on the west bank of the river, and their report is awaited. Enquiries are being made as to whether tube-wells will be found suitable as sources of water-supply in other municipal towns.

Tube-wells furnish a generally reliable and a comparatively inexpensive source of water-supply. The Minister accordingly hopes that chemical constituents of the water causing brackishness in isolated instances will not stand in the way of an extensive adoption of this method of water-supply, particularly by small municipalities which cannot afford a more expensive system of water-works.

Personal.—The Minister for Local Self-Government desires once more to record his appreciation of the very valuable work done by Dr. C. A. Bentley in his capacity as Director of Public Health, and of the efficient management of the engineering branch of the Public Health Department by the Chief Engineer, Mr. G. B. Williams, during the year under report. Dr. Bentley has presented the public health problems of the province with singular lucidity and has produced a report which will be of absorbing interest alike to sanitarians, medical men, and the general public. The interesting graphs which constitute a new feature in this year's report have considerably added to its value.

The Minister also desires to thank the other officers of the department whose services have been brought to the notice of Government. As the rousing of the sanitary conscience of the people is a most important factor in fighting disease, the Minister appreciates the services of Mr. K. P. Ray, publicity officer of the department of Public Health, and hopes that an improvement in the financial situation will make it possible to strengthen the publicity staff in the near future.

Thanks are also due to the Sanitary Board for advising on a number of sanitary schemes submitted by local bodies.

Among voluntary workers the names of Rai Bahadur Gopal Chandra Chatterjee, M.B., Secretary of the Central Co-operative Anti-malaria Society, Limited, and of Dr. D. N. Maitra, Secretary of the Bengal Social Service League, deserve prominent mention.

The Minister takes this opportunity of recording his thanks to both these gentlemen for their indefatigable services in the cause of public health in the province.

By order of the Government of Bengal
(Ministry of Local Self-Government),

G. S. DUTT,
Secretary to the Government of Bengal (offg.).

Nos. 472-82P.H.

Copy* (with copies of the reports†) forwarded to—

- (1) all Commissioners of Divisions for information and communication to all District Officers and all Chairmen of District Boards in their respective divisions.
- (2) the Surgeon-General, the Inspector-General of Prisons and the Inspector-General of Police, Bengal, for information.
- (3) the Director of Public Health, the Chief Engineer, Public Health Department, and the Secretary to the Sanitary Board, Bengal, for information.

* Resolution on the Public Health and Vaccination reports.
† For (1) and (2) only—Reports of the Director of Public Health, the Sanitary Board and the Chief Engineer, Public Health Department, for the year 1922 and the triennial report on vaccination in Bengal for the years 1920-21, 1921-22 and 1922-23.

By order of the Government of Bengal
(Ministry of Local Self-Government),

G. C. SEN,
Assistant Secretary to the Government of Bengal.

CALCUTTA :
LOCAL SELF-GOVT. DEPT.—*Public Health,*
The 10th March 1924.

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GOVERNMENT OF BENGAL.

LOCAL SELF-GOVERNMENT DEPARTMENT.

Public Health.

No. 471P.H.

FROM G. S. DUTT, Esq., I.C.S.,

Secretary to the Government of Bengal (offg.),

TO THE SECRETARY TO THE GOVERNMENT OF INDIA,

DEPARTMENT OF EDUCATION, HEALTH AND LANDS.

Calcutta, the 10th March 1924.

SIR,

I AM directed to submit for the information of the Government of

1. Report of the Public Health Department for 1922.
2. Triennial report on vaccination in Bengal for the years 1920-21, 1921-22 and 1922-23.

India copies of the reports noted on the margin, together with a copy of the resolution recorded thereon.

I have the honour to be,

SIR,

Your most obedient servant,

G S. DUTT,

Secretary to the Government of Bengal (offg.).

GOVERNMENT OF BENGAL

LOCAL SELF-GOVERNMENT DEPARTMENT

MEMORANDUM

NO. 1111 H.

Dated 28th July 1951

Subject: The Government of Bengal (P.W.D.)

To the GOVERNMENT OF THE GOVERNMENT OF INDIA

Reference is made to the letter from the Government of India dated 12th July 1951.

It is noted that the Government of India have advised that the Government of Bengal should take the necessary steps to meet the requirements of the Government of India.

1. It is requested that the Government of Bengal should take the necessary steps to meet the requirements of the Government of India. The Government of Bengal should also take the necessary steps to meet the requirements of the Government of India.

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Yours faithfully,
Secretary to the Government of Bengal (P.W.D.)

Published by the Bengal Secretariat Book Depôt, Writers' Buildings, Calcutta.

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