

Annual vaccination returns of the Province of Assam : with brief explanatory notes.

Contributors

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ANNUAL VACCINATION REPORT

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1918-19

WITH BRIEF EXPLANATORY NOTES

BY

MAJOR T. C. MCCOMBIE YOUNG, I.M.S.,
SANITARY COMMISSIONER, ASSAM.



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FROM

MAJOR T. C. McCOMBIE YOUNG, M.D., D.P.H., I.M.S.,
SANITARY COMMISSIONER, ASSAM,

TO

THE SECOND SECRETARY TO THE CHIEF COMMISSIONER
OF ASSAM.

Dated Shillong, the 18th June 1919.

SIR,

I HAVE the honour to submit herewith the Annual Vaccination Returns of the Province of Assam for the year 1918-19, with brief explanatory notes.

I have the honour to be,

SIR,

Your most obedient Servant,

T. C. McCOMBIE YOUNG, *Major, I.M.S.,*
Sanitary Commissioner, Assam.

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(Prescribed maximum length 3 pages.)

NOTES ON VACCINATION IN ASSAM FOR THE YEAR
1918-19.

1. *Introductory.*—The charge of the department was held by me throughout the year and the usual routine of work was followed.

2. *Vaccination agencies.*—In plains districts the vaccination work was carried out by the staff of vaccinators who are paid by local bodies, with the exception of those employed in the district of Goalpara who are licensed vaccinators and unpaid, and those employed in the hill districts, who are paid by Government. The total number of vaccinators employed during the year was 325, as compared with 305 in the year 1917-18.

The present staff of vaccinators is inadequate to meet the needs of the population. After careful study, an estimate was embodied in a note submitted to Government in July 1918 which calculated the number of vaccinators required to permit of every village being visited once annually. The increase therein suggested has been accepted by the majority of Local Boards, provision having been made in the budgets for 1919-20 for the needed expansion, but the Local Boards of Silchar, South Sylhet, Karimganj, Habiganj, Tezpur, Mangaldai and Dibrugarh have declined to make the provision suggested, for reasons which have not been communicated. In view of the comparatively small amount of expenditure involved, it is somewhat disappointing to find that carefully considered advice on this important subject has carried so little weight; particularly in Silchar where so much leeway has to be made up, is this failure unfortunate, *vide* my remarks in this connection in last year's report.

3. *Total number of operations.*—The total number of operations performed in Assam during the year 1918-19 was 289,184 as compared with 354,323 in 1917-18 showing a decrease of 54,276 under primary vaccinations and 10,863 re-vaccinations. This large decrease is due to the epidemic of influenza during the working season. The total number of operations performed by different agencies was as follows :—

266,284 operations by departmental vaccinators.

3,878 operations by the dispensary staff,

16,280 operations by tea garden agencies,

and

2,742 operations by the jail, lunatic asylum, police hospital and cholera hospital agencies.

The variations in the district returns are noticed in paragraph 8 of the report.

4. *Deaths from small-pox.*—The ratio of mortality from small-pox in Assam during the year 1918 was '34 per mille of population, as compared with '59 in 1917. The highest ratio, namely that of 1'65 was reported from the district of Kamrup. The Civil Surgeon of this district endeavours to account for some of this by pointing out that deaths due to "Measles" and "Chicken-pox" are also included under this head by the reporting agencies, and it is possible that the actual small-pox mortality is somewhat lower than that recorded. The next highest ratios, *i.e.*, '81 and '49 were reported from the districts of Sibsagar and Cachar, respectively, both being lower rates than those recorded in the two preceding years.

5. *Dispensary vaccination.*—The total number of persons vaccinated in dispensaries during the year 1918-19 was 3,878, as compared with 3,270 in 1917-18.

6. *Percentage of successful operations.*—The percentage of success in primary vaccinations was 95'16 and that for re-vaccinations was 68'53, as compared with 93'90 and 67'05, respectively, in 1917-18.

7. *Different methods of vaccination.*—As usual, all vaccinations were performed with glycerinated lymph, manufactured in the Vaccine Depot at Shillong.

8. *Vaccination work in different districts.*—Two districts show an increase in the number of operations performed during the year under report as compared with the preceding year, *viz.*, Sylhet (+9,816) and the Naga Hills (+4,207). An appreciable decrease is recorded in the districts of Kamrup (—19,344), Cachar (—13,054) Sibsagar (—11,759), Darrang (—10,008), Lakhimpur (—6,767) and Goalpara (—6,397), the reason for this being the influenza epidemic, to deal with which the services of the entire vaccination staff were, in nearly all districts, utilised, to the detriment of the vaccination work.

Several bad instances of falsification of returns by vaccinators were detected in the district of Kamrup, and 13 vaccinators were dismissed for this reason. There is reason to believe that falsification of their returns has for years been largely practised in Kamrup by the district vaccinators, a fact which vitiates all attempts to criticise the district vaccination figures of former years, and explains the continued prevalence of small-pox in a district with an ostensibly high percentage of protection. The Civil Surgeon, Goalpara, reports that three licensed vaccinators deserted their posts, for fear of being punished for falsifying their returns, and that another was suspended for sending a report of an outbreak of small-pox, which on investigation by the inspecting staff was found to be false. These experiences show the unreliability of the staff with which we have to work, and the need for greater supervision (*vide* paragraph 10), and the services of a Deputy Sanitary Commissioner are badly required to exercise supervision over the details of the vaccination work.

9. *Composition and strength of the inspecting staff.*—There was no change under this head during the year.

10. *Verification by inspecting officer.*—The Civil Surgeons and the subdivisional Assistant Surgeons on behalf of Civil Surgeons, inspected 13,026 primary operations and 2,105 re-vaccinations, or 5·83 per cent. and 4·49 per cent., respectively, of the total number of operations of each class performed during the year. These figures cannot fairly be compared with those of former years, as the circumstances of the year under review were exceptional. The Civil Surgeons of Nowgong and of Lakhimpur head the list, having inspected 16·71 and 13·01 per cent. of the total number of primary operations performed, while on the other hand the Civil Surgeon, Naga Hills, inspected none at all, the Civil Surgeon, Khasi and Jaintia Hills, only 92, and the Civil Surgeon, Lushai Hills, 174. The subordinate inspecting staff inspected 54·86 per cent. of the primary operations and 59·66 re-vaccinations performed, as compared with 55·18 and 40·86, respectively, of the preceding year. The number of vaccination inspections performed in Goalpara by the vaccination inspecting staff was very small, owing to transfers during the working season. In the Lushai Hills, the Sub-Inspector of Vaccination inspected only 388 operations or 14·03 per cent. and an explanation is required.

11. *Vaccination in compulsory areas.*—Out of an estimated number of 3,368 infants available for vaccination in areas in which the Compulsory Vaccination Act is in force, 1,620 or 48·09 per cent. available infants were successfully vaccinated, as compared with 53 per cent. in the preceding year. The provisions of the Act appear to have been very successfully enforced in the town of Nowgong where all the infants available for vaccination were vaccinated. The degree of protection afforded by successful vaccinations to infants in the towns of Sunamganj (20·22 per cent.) Silchar (22·74), Sylhet (24·93), Habiganj (28·35) and Barpeta (28·96) appears to be low, but the conditions are, however, better than would appear from this computation, as few, if any, surviving children who continue to reside in these compulsory areas remain unvaccinated. The tendency of parents is to postpone vaccination as late as possible, preferably until after their children are one year of age, and as vaccination is not ordinarily carried on during six months of the hot weather, the arrears of one year are usually adjusted in the following vaccination season.

12. *Vaccine Depôt.*—The total number of capillary tubes loaded for issue during the year 1918-19 was 483,385 as compared with 561,854 in the preceding year, showing a decrease of 78,469 tubes. Owing to the pandemic of influenza vaccination work was for sometime suspended in many districts, and demands for lymph were therefore not so heavy as in normal times.

The total cost of working the vaccine depôt during the year was Rs. 11,116-11-2, as against Rs. 7,808-0-8 in 1917-18. The increase is partly due to the inclusion in this year's expenditure of the cost of capillary tubes, the stock from which we had in previous years drawn our requirements being now exhausted, and partly to an increase in the number of calves used. This item, in view of the smaller output of lymph requires an explanation, which the Superintendent of Vaccine Depôt gives in the following words—"The increase was due to the fact that many calves were rejected for sickness. There seems to have been an epidemic of cattle-disease in the district. There were also a large number of rejections among the inoculated calves which was attributed to the bad quality of the lanoline received from the Medical Stores. This lanoline was impure and seemed to impair the efficiency of the seed lymph for the preparation of which it is used".

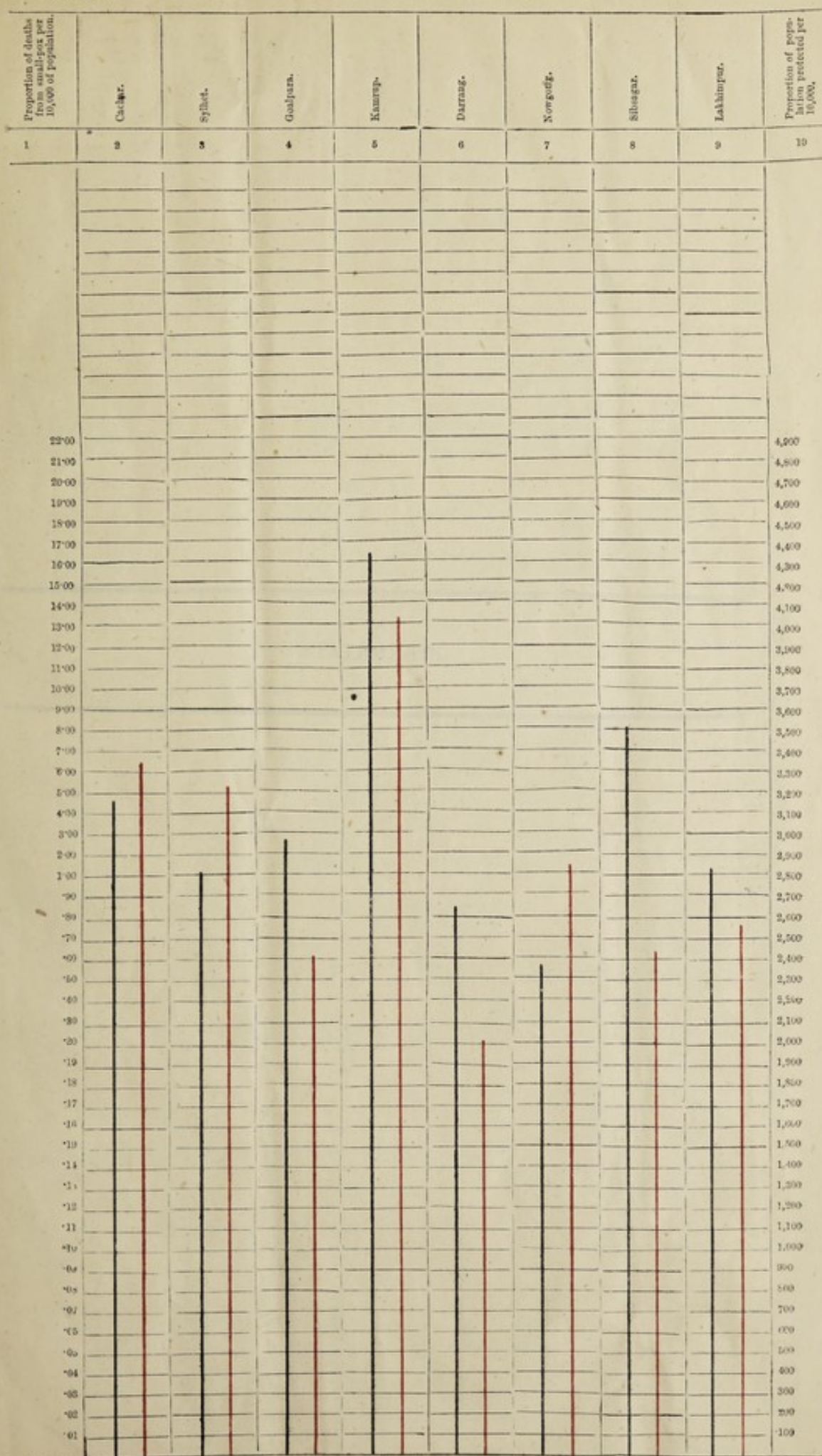
13. *Cost of the Department.*—The total cost of the department amounted to Rs. 58,247-4-5 during the year 1918-19, as compared with Rs. 55,000-11-10 in 1917-18. The increase of Rs. 3,246-8-7 is almost entirely due to the increased expenditure incurred in the Vaccine Dépôt as explained above, the expenditure under other heads showing no large variations requiring explanation. The cost of each successful case of vaccination was Re. 0-3-11 during the year 1918-19, against Re. 0-3-2 in 1917-18, the comparatively small number of operations performed, and the rise in the cost of the dépôt, furnishing an explanation of the increase.


14. *General.*—A total of 16,280 vaccination operations is reported to have been performed in tea gardens by garden medical officers, against a total of 28,927 in the preceding year. The total number of operations reported to have been performed in jails, lunatic asylum, police hospitals and cholera hospitals by their respective medical officers was 2,742 against 2,479 operations in the preceding year.

T. C. McCOMBIE YOUNG, *Major, I.M.S.,*

Sanitary Commissioner, Assam

The following diagram illustrates the death-rates from small-pox in each district side by side with the proportion of the population protected against the disease by vaccination during the seven years 1912-13 to 1918-19.





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STATEMENTS.

Statement No. I—Showing particulars of Vaccination in

No.	District.	Population of district according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary	
									Total.	Under one year.
1	2	3	4	5	6			7	8	9
SURMA VALLEY AND HILL DISTRICTS.					Male.	Female.	Total.			
1	Cachar ... By paid vaccinators ...	497,463	139	26	8,465	7,377	15,842	609	13,714	1,156
2	Sylhet ... By paid vaccinators ...	2,472,671	458	96	60,378	55,239	115,617	1,204	100,206	7,757
3	Khasi and Jaintia Hills...By paid vaccinators.	235,069	40	9	2,966	3,034	6,000	666	4,776	611
4	Naga Hills ...By paid vaccinators ...	149,623	48	6	3,953	3,703	7,656	1,276	3,691	394
5	Lushai Hills ...By paid vaccinators ...	91,204	12	5	1,593	1,103	2,696	539	2,552	58
	Total of Surma Valley and Hill Districts.	3,446,030	136	142	77,355	70,466	147,811	1,041	124,933	9,976
ASSAM VALLEY DISTRICTS.										
6	Goalpara ... { By paid vaccinators ... By licensed vaccinators ... }	606,643	151	{ 2 22	303 80,48	195 7,307	498 15,355	249 697	394 14,359	298 4,918
7	Kamrup ... By paid vaccinators ...	667,828	173	51	15,562	14,059	29,621	580	28,229	5,907
8	Darrang ... By paid vaccinators ...	377,314	110	18	2,215	2,158	4,373	243	3,639	512
9	Nowgong... By paid vaccinators ...	303,596	79	16	5,853	5,645	11,498	718	11,472	2,750
10	Sibsagar ... By paid vaccinators ...	690,299	138	40	9,471	8,123	17,594	439	13,399	1,637
11	Lakhimpur ... By paid vaccinators ...	468,989	193	17	6,044	5,470	11,514	677	10,511	1,586
12	Garo Hills... By paid vaccinators ...	158,936	50	6	3,050	3,063	6,113	1,018	5,872	3,063
	Total of Assam Valley Districts. { By paid vaccinators ... By licensed vaccinators ... }	3,267,605	118	{ 150 22	42,498 8,048	38,713 7,307	81,211 15,355	541 697	73,516 14,359	15,753 4,918
13	Manipur ... By paid vaccinators ...	346,222	41	9	11,658	9,691	21,349	2,372	8,689	4,488
14	North-East Frontier District.	...	...	2	336	222	558	279	437	94
	Total Vaccine Department. { By paid vaccinators ... By licensed vaccinators ... Total ... }	7,059,857	115	{ 303 22 325	131,847 8,048 139,895	119,082 7,307 126,389	250,929 15,355 266,284	828 697 819	207,575 14,359 221,934	30,311 4,918 35,229
	Total Dispensaries ...	...	...	...	...	...	3,878	...	1,406	202
	Total tea-gardens by garden agencies ...	...	...	...	8,253	8,027	16,280	...	12,866	6,133
	Total Jails, Lunatic Asylum, Police and cholera hospitals.	...	...	...	2,654	88	2,742	...	799	7
	Grand total ...	7,059,857	115	325	160,802	134,504	289,184	819	237,005	41,571

Sum

1	Total number of persons vaccinated.		Total number of operations performed	
	Primary.	Re-vaccinations.	Primary.	Re-vaccinations.
1	2	3	4	5
By special staff (Statement I) ...	221,934	44,350	221,934	44,350
By dispensary staff (Statement III) ...	1,406	2,472	1,406	2,472
By other agencies—tea-gardens, Jail hospital, Police hospital and cholera hospital.	13,665	5,357	13,665	5,357
Total ...	237,005	52,179	237,005	52,179

DEPARTMENT.

the Province of Assam during the year 1918-19.

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 previous five years.		Average annual number of deaths from small-pox during previous five years.	
Successful.														
Over one and under six years.	Total of all ages.	Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
9,479	12,962	106	2,128	1,382	122	95.25	63.90	28.63	.77	5.73	18,828	36.64	315	.63
69,318	96,393	...	15,417	8,042	...	96.20	52.16	42.23	...	...	106,158	42.93	549	.22
2,472	4,675	...	1,224	720	...	97.88	58.82	22.95	...	...	7,858	33.42	18	.07
2,326	3,316	103	3,965	3,410	74	92.41	87.63	44.95	2.79	1.83	4,350	29.07	...	...
1,329	2,116	...	144	72	...	82.91	60.00	15.99	...	...	3,115	34.15	...	...
84,924	119,432	209	22,878	13,526	196	95.78	59.63	38.59	.16	.85	140,309	40.71	882	.25
64	369	3	104	50	...	94.37	48.07	23.32	{ .76	...	22,174	36.91	452	.75
7,461	12,964	199	996	624	85	91.55	68.49	33.60	{ 1.38	8.53	39,847	59.66	1,112	1.66
17,301	26,806	146	1,392	921	108	95.45	71.72	41.51	.51	7.75	11,975	31.73	133	.35
2,056	2,883	165	734	280	107	82.98	44.65	8.38	4.53	14.56	12,528	41.26	57	.18
7,156	11,355	...	26	20	...	98.98	76.92	37.46	...	...	22,548	32.66	627	.90
10,751	13,388	342	4,195	2,794	159	94.87	69.22	21.99	2.55	3.79	12,831	27.35	62	.13
7,291	9,762	28	1,003	774	14	93.12	78.26	22.46	.26	1.39	10,307	64.85	28	.17
1,877	5,058	402	241	138	86	92.46	89.03	32.69	6.84	35.68	...	...	...	...
46,896	68,621	1,086	7,695	4,977	474	94.74	68.92	26.68	{ 1.47	6.15	132,210	40.46	2,471	.75
7,461	12,964	199	996	624	85	91.55	68.49	33.60	{ 1.38	8.53	...	...	...	...
2,777	7,263	1,126	12,660	9,355	1,707	96.05	85.41	48.00	12.95	13.48	13,555	39.15	...	...
324	420	...	121	51	23	96.10	52.04	...	...	19.00	...	...	...	...
134,421	195,768	2,421	43,354	27,909	2,400	95.42	68.14	33.60	{ 1.16	5.53	285,474	40.43	3,353	.47
7,461	12,964	199	996	624	85	91.55	68.49	33.60	{ 1.38	8.53	...	...	...	...
141,882	208,732	2,620	44,350	28,533	2,485	95.17	68.15	33.60	{ 1.18	5.60	...	...	...	...
857	1,216	33	2,472	1,444	525	88.56	74.16	...	2.34	21.23	1,935	...	...	...
5,693	12,441	17	3,414	2,813	4	96.82	82.40	...	.13	.11	21,349	...	...	...
89	574	45	1,943	652	366	76.12	41.34	...	5.63	18.83	1,023	...	...	...
148,521	222,963	2,715	52,179	33,442	3,380	95.16	68.53	36.31	1.14	6.47	309,781	43.87	3,353	.47

mary.

Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccination per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
Primary.	Re-vaccinations.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
6	7	8	9	10	11	12	13	14
95.17	68.15	325	819	35,229	141,882	33.60	Rs. a. p. 58,247 4 5	Rs. a. p. 0 3 11
88.56	74.16	...	...	202	857	...	...	...
95.67	69.48	...	...	6,140	5,782	...	...	...
95.16	68.53	325	819	41,571	148,521	35.31	58,247 4 5	0 3 11

Statement No. II—Showing the cost of Vaccination in

No.	District.	Expen.												
		European supervising officer.	Pay.	Native supervising officer.	Pay.	Paid vaccinators.	Pay.	Licensed vaccinators.	Pay.	Clerks.	Pay.	Peons, etc.	Pay.	Total pay of establishment.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Rs. a. p.			Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.		Rs. a. p.	Rs. a. p.
1	Cachar ...	...	...	2	919 0 0	26	2,111 7 8	...	...	...	...	...	...	3,130 7 8
2	Sylhet ...	...	...	6	2,190 0 0	96	8,524 6 0	...	...	...	...	...	...	10,714 6 0
3	Khasi and Jaintia Hills ...	...	...	12	660 0 0	9	1,728 0 0	...	...	...	...	...	...	2,388 0 0
4	Naga Hills ...	...	...	1	477 8 0	6	755 13 4	...	...	...	...	...	...	1,233 8 4
5	Lushai Hills ...	...	...	1	300 0 0	5	417 4 4	...	...	...	...	...	...	717 4 4
6	Goalpara ...	...	...	12	832 6 1	2	355 2 2	22	...	...	...	...	...	1,207 8 3
7	Kamrup ...	...	...	3	843 6 0	51	2,970 5 10	...	...	...	...	...	...	3,813 11 10
8	Darrang ...	...	...	12	790 0 0	18	1,200 14 5	...	...	...	...	...	...	2,050 14 5
9	Nowgong ...	...	...	12	508 8 0	16	1,302 12 0	...	...	...	...	...	...	2,301 4 0
10	Sibsagar ...	...	...	3	1,068 6 4	40	2,615 9 4	...	...	...	...	...	...	3,683 15 8
11	Lakhimpur ...	...	...	3	1,248 9 3	16	2,135 2 1	...	...	...	...	...	...	3,383 11 4
12	Garo Hills ...	...	...	1	323 0 0	6	698 9 4	...	...	...	...	...	...	1,019 9 4
13	Manipur State ...	...	...	1	240 0 0	9	1,185 9 10	...	...	...	...	...	...	1,425 9 10
14	North-East Frontier District.	...	...	...	...	2	184 7 5	...	...	...	...	...	...	184 7 5
	Total of Districts ...	...	...	29	10,820 11 8	302	26,433 7 9	22	...	...	...	...	...	37,354 3 5
	Shillong Vaccine Depot	1	600 0 0	1	1,080 0 0	12	2,063 8 8	...	...	...	...	...	...	3,763 8 8
	Total for the Province	1	600 0 0	30	11,900 11 8	314	28,517 0 5	22	...	...	...	...	...	41,017 12 1

the Province of Assam during the year 1918-19.

ditate.

				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.		
	Cost of Vaccine.	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.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,009 10 0	...	115 1 0	4,305 2 8	...	1,663 14 0	2,455 3 10	186 0 10	...	4,305 2 8	14,244	0 4 10
2,061 7 8	...	288 11 3	13,064 8 11	...	3,643 11 2	9,084 3 5	336 10 4	...	13,094 8 11	104,435	0 2 9
1,072 13 0	...	18 13 0	3,479 10 0	...	3,287 10 0	...	192 0 0	...	3,479 10 0	5,395	0 12 2
236 0 0	...	4 8 0	1,473 13 4	...	1,473 13 4	...	...	...	1,473 13 4	6,736	0 3 6
229 8 0	...	38 3 2	984 15 6	...	984 15 6	...	...	...	984 15 6	2,188	0 7 2
313 12 3	...	505 5 0	2,026 9 6	...	1,140 13 7	822 3 11	63 8 0	...	2,026 9 6	14,097	0 2 3
516 4 6	...	55 1 0	4,385 1 4	...	1,359 10 6	2,609 11 10	415 11 0	...	4,385 1 4	27,727	0 2 6
631 5 0	...	90 1 0	2,772 4 5	...	1,423 8 0	1,168 12 5	180 0 0	...	2,772 4 5	3,163	0 14 9
575 1 0	...	47 7 0	2,923 12 0	...	1,435 8 0	1,380 4 0	108 0 0	...	2,923 12 0	11,315	0 4 1
381 1 6	...	85 0 0	4,150 1 2	...	1,531 1 10	2,189 15 4	458 0 0	...	4,150 1 2	15,182	0 4 4
439 8 0	...	84 13 6	3,908 0 10	...	1,648 6 3	1,848 11 1	410 15 6	...	3,908 0 10	10,536	0 5 11
443 12 0	...	9 7 6	1,472 12 10	...	1,472 12 10	...	...	...	1,472 12 10	5,196	0 4 6
...	547 12 0	21 1 6	1,994 7 4	...	...	...	...	1,994 7 4	1,994 7 4	16,620	0 1 11
4 14 0	189 5 5	...	189 5 5	...	...	...	189 5 5	471	0 6 5
7,965 0 11	547 12 0	1,363 8 11	47,130 0 3	...	21,255 2 5	21,520 1 10	2,330 13 8	1,994 7 4	47,130 9 3	237,265	0 3 2
...	...	7,853 2 6	11,116 11 2	...	11,116 11 2	...	...	...	11,116 11 2	...	...
7,965 0 11	547 12 0	8,716 11 5	58,247 4 5	...	32,371 13 7	21,520 1 10	2,330 13 8	1,994 7 4	58,247 4 5	237,265	0 3 11

B.—DISPENSARY

Statement No. III—Showing Dispensary Vaccination

District.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.				
					Total.	Successful.			Unknown.
						Under one year.	Over one and under six years.	Total of all ages.	
1	2	3	4	5	6	7	8	9	10
Cachar
Sylhet
Khasi and Jaintia Hills
Naga Hills	1,784	...	487	60	234	382	24
Lushai "	232	...	213	50	95	179	...
Goalpara
Kamrup
Darrang
Nowgong	371	...	350	26	273	334	...
Sibsagar
Lakhimpur
Garo Hills	3	...	2	1	1	2	...
Manipur State	1,488	...	354	65	254	319	9
North-East Frontier District.
Total	3,878	...	1,406	202	857	1,216	33

Comparative Statement No. IV—Showing the number of persons primarily vaccinated in each of the under

Establishment.	Persons							
	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
	Year ending							
	1909-10.	1910-11.	1911-12.	1912-13.				
1	2	3	4	5	6	7	8	9
Government ...	31,212	30,128	25,926	23,580	24,950	24,146	30,130	28,802
Dispensaries ...	2,818	2,474	2,549	2,128	1,464	1,390	1,036	937
Municipal ...	2,309	2,182	2,347	2,237	3,262	3,023	3,517	3,093
Local Funds ...	147,644	142,315	161,234	154,616	179,887	176,566	179,380	176,043
Licensed vaccinators	39,645	38,285	31,811	29,902	37,963	37,231	45,790	44,338
Apprentices ...	5,187	5,102	4,682	4,563	16,762	16,411	13,169	13,542
Native States ...	13,316	10,166	13,358	11,612	13,193	11,756	13,656	11,521
Total ...	242,131	230,652	241,907	228,638	277,481	270,523	287,178	278,274

VACCINATION.

in the Province of Assam during the year 1918-19.

Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
11	12	13	14	15	16	17
...
...
1,297	658	221	82.50	61.15	4.92	17.03
19	13	...	84.03	68.42	...	...
...
...
21	13	...	95.42	61.90	...	...
...
...
1	...	...	100.00	...	...	...
1,134	760	304	92.46	91.56	2.54	26.8
...
2,472	1,444	525	88.56	74.16	2.34	21.23

and the number of those persons who were successfully vaccinated in the Province of Assam mentioned official years.

primarily vaccinated.

Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
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31st March.

1913-14.		1914-15.		1915-16.		1916-17.		1917-18.		1918-19.	
10	11	12	13	14	15	16	17	18	19	20	21
33,014	31,655	23,384	20,649	21,909	18,365	23,969	22,218	23,473	20,246	17,809	15,570
1,005	900	1,580	1,430	1,095	945	2,553	2,149	1,929	1,704	1,406	1,216
2,897	2,865	2,828	2,684	5,575	5,389	5,110	4,793	4,495	4,199	4,072	3,792
179,040	176,981	169,629	163,948	173,757	168,724	213,215	208,712	201,759	189,413	170,387	162,163
44,537	43,523	34,560	32,706	25,697	24,562	18,942	18,154	18,760	17,188	14,316	12,931
15,329	15,007	17,208	16,645	16,342	15,966	6,445	6,235	7,888	7,614	7,161	7,011
13,626	12,343	13,756	12,595	13,974	12,966	12,946	12,023	12,947	9,909	8,689	7,265
289,448	283,274	262,945	250,657	257,749	246,917	283,180	274,284	271,261	250,273	223,340	209,948

Statement No. V—Showing particulars of Vaccination verified by Inspecting Officers for the year 1918-19.

District.	Total number of persons vaccinated.		Total number inspected.				Percentage of inspection to total number vaccinated.				Percentage of successful cases to total number inspected.				Percentage of successes reported by vaccinators.	
			By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.		By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.		By Deputy Sanitary Commissioners or Civil Surgeons.		By Native Superintendents or other inspecting officers.			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	13,714	2,128	997	119	10,070	1,598	7.27	5.59	73.42	64.28	97.50	42.86	95.24	64.11	95.25	63.90
Sylhet	100,200	15,417	5,242	1,270	55,629	10,088	5.23	8.23	56.51	65.43	94.25	57.48	93.81	45.98	96.20	52.16
Khasi and Jaintia Hills	4,776	1,224	92	7	3,911	1,300	1.92	.06	81.67	96.03	85.97	...	97.57	53.91	97.83	53.82
Naga Hills	4,178	5,362	...	...	1,461	1,927	...	...	34.96	36.62	...	...	81.58	53.13	92.41	87.63
Lushai „	2,765	163	174	...	388	47	6.29	...	14.63	28.83	64.94	...	75.00	59.57	83.91	59.09
Goalpara	14,753	1,100	938	78	1,504	49	6.35	7.09	12.90	4.45	89.78	49.61	90.22	32.65	91.63	66.40
Kamrup	28,229	1,292	481	27	10,434	548	1.70	1.94	36.96	39.36	93.76	50.26	91.09	52.75	90.45	71.72
Darrang	3,639	734	147	...	1,072	224	4.04	...	29.45	39.51	91.83	...	99.85	45.08	82.98	44.65
Nowgong	11,822	47	1,976	33	9,401	17	16.71	79.21	89.28	36.17	98.18	84.85	98.23	64.70	98.98	76.92
Sibsagar	13,399	4,195	734	254	11,237	2,381	5.49	6.03	83.86	56.75	94.61	49.60	95.29	57.37	94.87	69.22
Lakhimpur	10,511	1,063	1,267	109	9,247	702	13.01	9.97	87.97	69.16	81.86	82.00	98.29	69.37	93.12	78.26
Garo Hills	5,874	242	419	4	1,780	32	7.13	1.65	29.79	13.22	90.69	100.00	89.8	84.37	92.46	89.03
Manipur State	9,043	13,794	609	213	4,940	9,355	8.67	2.22	91.32	97.77	94.66	55.39	96.13	84.29	96.05	85.41
North-East Frontier district	437	121	...	...	...	...	...	...	...	...	...	...	...	...	96.10	52.04
Total	223,340	46,822	13,026	2,105	122,534	27,938	5.63	4.49	54.86	59.66	89.51	64.56	91.77	59.02	95.17	68.15

Statement No. VI—Showing the number of Vaccinations performed in Municipal towns on children under one year of age during the year 1918-19.

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 1919.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Cachar	Silechar	262	51	48	21st January 1892.
	Sylhet	467	78	97	1st October 1882.
	Habiganj	170	36	38	11th December 1913.
Sylhet	Sunamganj	130	41	18	28th June 1915.
	Karimganj	77	18	24	27th July 1915.
	Maulvi Bazar	67	17	37	16th April 1916.
Khasi & Jaintia Hills	Shillong	414	81	151	21st June 1895.
	Total of Surma Valley and Hill Districts.	1,587	322	413	
Goalpara	Dhubri	178	26	85	13th February 1891.
	Goalpara	230	48	122	12th November 1890.
Kamrup	Gauhati	393	76	180	August 1852.
	Barpeta	545	110	126	29th October 1915.
Darrang	Tezpur	214	34	127	22nd May 1907.
	Mangaldai	14	7	3	12th October 1916.
Nowgong	Nowgong	194	28	175	7th April 1897.
	Sibsagar	113	20	48	21st January 1892.
Sibsagar	Jorhat	213	19	123	12th April 1892.
	Golaghat	60	16	46	24th March 1892.
	Nazira	64	13	58	1st December 1916.
Lakhimpur	Dibrugarh	338	56	112	September 1883.
	Total of Assam Valley Districts.	2,556	453	1,207	
	Total for the Province.	4,143	775	1,620	

Statement No. VII—Showing, side by side, the ratio per 1,000 of population of deaths

District.	1909-10.		1910-11.		1911-12.		1912-13.	
	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.
1	2	3	4	5	6	7	8	9
Cachar	·02	15,177	·03	15,635	·002	16,641	·008	16,992
Sylhet	·07	79,768	·07	83,189	·38	108,987	·99	132,022
Khasi and Jaintia Hills ...	·59	8,815	·04	5,026	·004	7,369	·13	10,740
Naga Hills ... ..	...	5,335	...	4,518	...	4,836	...	5,119
Lushai „ ... ..	...	2,738	...	2,799	...	3,121	...	3,123
Goalpara	·83	26,561	·28	19,065	·44	23,151	·69	19,731
Kamrup	1·07	27,111	·58	25,006	1·21	39,178	1·89	39,978
Darrang	1·22	6,778	·30	10,036	·56	10,606	·50	10,964
Nowgong	3·49	4,523	3·05	7,456	·44	8,469	·95	6,602
Sibsagar	·57	19,084	·19	21,089	·16	18,490	·09	18,298
Lakhimpur	·08	14,688	·05	14,470	...	14,119	·006	14,063
Garo Hills	·09	17,120	·15	13,219	·01	15,161	·09	12,338
Manipur State ... ..	...	10,429	...	12,082	...	12,025	...	11,678
North-East Frontier district ...	...	...	...	...	...	...	...	...
Total	·47	238,127	·28	233,560	·35	282,153	·67	301,648

from small-pox and the number of successful vaccinations during the ten years ending 1918-19.

1913-14.		1914-15.		1915-16.		1916-17.		1917-18.		1918-19.	
Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.	Ratio of deaths from small-pox.	Number of successful vaccination.
10	11	12	13	14	15	16	17	18	19	20	21
·006	19,596	...	15,146	·008	13,641	·59	26,734	2·24	17,561	·49	14,244
·47	113,226	·14	100,597	·06	102,842	·26	120,578	·52	93,549	·11	104,435
·35	9,128	·64	8,108	·02	4,963	...	9,355	·03	7,902	·11	5,395
...	6,363	...	4,572	...	3,843	...	4,811	...	4,663	...	7,766
...	3,027	...	3,481	·02	3,639	...	3,610	...	4,031	...	2,380
·59	23,408	·78	24,185	1·07	23,236	·82	20,263	·79	19,822	·27	14,007
1·02	42,323	2·03	40,178	3·10	35,050	·79	36,831	·74	44,802	1·65	27,727
·82	11,508	·36	12,092	·61	13,563	·61	11,130	·08	11,582	·08	3,163
·43	12,948	·24	12,494	·25	12,408	·34	13,106	·04	13,225	·05	11,722
·14	18,768	·18	18,077	1·22	22,813	1·35	29,676	·96	23,404	·81	15,182
·07	14,227	·09	13,982	·06	10,282	·18	9,758	·16	15,905	·14	10,536
·84	22,813	·60	9,368	·39	8,171	·13	6,773	·98	5,023	...	5,198
...	12,498	...	12,879	...	13,094	...	12,152	...	18,159	...	17,699
...	...	...	...	...	...	...	765	...	707	...	471
·40	309,831	·37	275,159	·58	267,545	·47	305,622	·59	280,335	·34	239,925

