**Triennial vaccination report of the Province of Assam : with brief explanatory notes.**

**Contributors**

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# TRIENNIAL VACCINATION REPORT

OF THE

# PROVINCE OF ASSAM

FOR THE YEARS

## 1917-18, 1918-19 and 1919-20,

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 11th June 1920.*

SIR,

I HAVE the honour to submit herewith the Triennial Report on Vaccination in Assam for the years 1917-18, 1918-19 and 1919-20.

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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[Maximum limit of narrative portion of the report—8 pages.]

# TRIENNIAL REPORT

ON

## Vaccination in Assam

FOR THE YEARS

## 1917-18, 1918-19 and 1919-20.

1. *Introductory.*—The charge of the Vaccination Department throughout the triennium from 1917-18 to 1919-20 was held by me. The yearly reports of 1917-18 and 1918-19 contained observations on the more important features of the work of those years, while this report deals more fully with the vaccination work performed during the triennium as a whole.

2. *Vaccination agencies.*—The average annual number of vaccinators employed during the triennium under review was 353, as compared with 312 in the preceding triennium. In July 1918, a proposal to increase the number of vaccinators entertained by Local Boards was submitted to the Local Administration, which was calculated on the basis of an annual visit to every village, as it had been noticed that outlying villages were often not visited by vaccinators even at intervals of five years or more. It is satisfactory to note that the majority of Local Boards have now accepted these recommendations, with good results, although Sylhet is still 27 short of the necessary number, partly owing to the refusal of Karimganj Local Board to increase its staff.

Licensed vaccinators are no longer employed in any district, Goalpara, which was the last to retain this system having abandoned it for the work of 1919-20.

The average number of operations performed by a vaccinator during the triennium was 938 against 982 of the previous triennial period, the decrease being largely due to the very small amount of vaccination done during the influenza epidemic of 1918-19.

3. *Total number of operations.*—The total number of operations performed by all establishments during the triennial period, 1917-18 to 1919-20, was 1,085,373 as compared with 1,004,076 in the preceding triennium 1914-15 to 1916-17, showing an increase of 81,297 operations, to which Manipur State contributed 80,847, although excluding Manipur State, there was not much increase. The number of operations performed during the year 1919-20 was 441,866 with 328,692 primary and 113,174 re-vaccinations, against 289,184, 237,005 and 52,179, respectively, in 1918-19 and 354,323, 291,281 and 63,042, respectively, in 1917-18. The prevalence of influenza in 1918-19 interfered greatly with vaccination work and had it not been for the increase of 1919-20, the out-turn of the triennium under review would have been much lower than that of the preceding one.

The number of persons successfully vaccinated during the year 1919-20 was at the rate of 52·97 per 1,000 of population as compared with 36·31 in 1918-19 and 43·74 in 1917-18. The corresponding rate during the triennial period ending 1919-20 was 44·34 as against 43·82 for the preceding period.

4. *Deaths from small-pox.*—The ratio of mortality from small-pox per 1,000 of population in 1919 was ·20 as compared with ·34 per mille in 1918 and ·59 per mille in 1917. The highest ratio of ·66 per mille was reported from Goalpara, the next highest, ·58 per mille, being reported from Sibsagar. The provincial ratio for the year was lower than that of any of the preceding ten years.

5. *Dispensary vaccination.*—The total number of persons vaccinated by the dispensary staff during the year 1919-20 was 11,119 as compared with 3,878 in 1918-19 and 3,270 in 1917-18, the annual average of the triennial period being 6,089 against 2,534 in the preceding triennium.

6. *Percentage of successful operations.*—The percentage of successful operations performed by all establishments was 95·71 in regard to primary operations and 72·04 in regard to re-vaccination, as against 95·16 and 68·53 in 1918-19 and 93·90 and 67·05 in 1917-18.

The lymph supplied during the year appears to have been of excellent quality. From only one district were reports of October failures received, and it is not clear that the complaint was well founded. During the triennium, the system of keeping all lymph in cold storage for a period of 3 months prior to issue was introduced with very satisfactory results, both in the reduction of septic complications and excessive reactions, and in the administrative convenience of having a reserve in hand to meet emergencies.

7. *Different methods of vaccination.*—As usual, all vaccination operations were performed with glycerinated lymph manufactured in the Vaccine Depôt at Shillong and no other methods were practised.

8. *Vaccination work in different districts.*—The following tabulated statement shows the progress of vaccination in different districts during the triennial period under review as compared with the preceding one. As noted in the report of 1918-19, work in that year was much below the average, owing to the widespread outbreak of influenza, and the withdrawal of the staff of vaccinators from their legitimate work to aid in measures aimed at alleviating the distress caused by the epidemic, and the work of the year 1919-20 was also hampered by the same cause, although in a lesser degree. From a scrutiny of the district figures it appears that the Manipur State showed the largest increase of vaccination operations, the reason being that unlike previous years, vaccination work in 1919-20 was carried on throughout the year, the number of vaccinators having been largely increased. It is remarked that " the entire valley and a large part of the hill area were very thoroughly treated ". One notices that the unusual number of 4,314 operations per vaccinator was claimed, that an unusually large percentage of success in re-vaccination was claimed and that there was a large number of cases, both primary and re-vaccinations of which the results were not ascertained, and while there is little doubt that a commendable increase in the number of vaccination operations took place, the actual figures must be accepted with a considerable degree of scepticism.

In Sylhet, the number of vaccinators now employed is larger by 35 than it was in the previous triennium and in spite of the influenza epidemic, 21,431 more operations have been performed in this triennium than in the one before it. The Local Board of Sunamganj has accepted the recommendations for an increase of vaccinators ' in *toto* ' and with the help of the Subdivisional Officer, Mr. Mufizur Rahman, whose assistance Colonel Wood, the Civil Surgeon, gratefully acknowledges, great progress has been made. North Sylhet, Habiganj and South Sylhet Local Boards in part accepted our views, increased their staff and shared in the improvement, and only the Karimganj Local Board has proved obdurate and refused to provide the extra staff.

In 1919-20, an average of some 1,200 operations per vaccinator was returned and Colonel Wood and staff are to be congratulated on the result of their efforts.

In regard to the change from licensed to paid vaccinators recently effected in Goalpara, the Civil Surgeon Dr. Bancroft remarks " While I quite recognise that it is much too premature to comment optimistically on the change, yet if statistics speak true and make for anything, the change appears to have justified itself in its first season ". The difficulties attending the change of system are shown by the observation that " Owing to strict supervision, eighteen vaccinators resigned, two were dismissed for falsifying their returns, and reliable men were not available to replace most of them ". For the fall of 9,563 operations in the district the pandemic of influenza in 1918-19 is blamed. The fall of 8,371 operations in Kamrup is reported to be due to stricter supervision of the vaccinators' work, which in former years was very corrupt and dishonest, falsification of returns being very extensively practised. The opposition of Mahapurushias is being gradually overcome by co-operation of the District and Subdivisional Officers. The large fall of 7,011 operations in Darrang is due to the influenza epidemic of the year 1918-19. The Civil Surgeon Major McCoy, I.M.S., acknowledges with thanks the assistance of the District Magistrate in overcoming the occasional opposition of Kacharis and Mahapurushias to vaccination, and he describes how, through the Deputy Commissioner's assistance, he was able to secure

the vaccination of a whole block of refractory villages. Throughout the triennium the Nowgong district vaccination work under Dr. Dodds Price has continued to be a model for other districts where the administration has been less close, and the low smallpox mortality ratio of this district has been well maintained. There is a drop of 5,859 operations in the district of Sibsagar which is stated by the Civil Surgeon Major Macdonald, I.M.S., to be largely due to the non receipt from tea estates of returns regarding the number of operations performed on them. One notes however that the average number of operations per vaccinator during 1919-20 was only 609, as compared with 1,008 in 1915-16 and 915 in 1916-17, a decrease which is probably not unconnected with the fact that the Civil Surgeon did not inspect any vaccination operations during the season 1919-20, although in part due to the influenza epidemic of 1918-19. The low primary success rate of 86·79 per cent. in the Lushai Hills where the dispensary success rate was 96·86 per cent. seems to indicate that lymph is kept too long by the vaccinators before use. Probably this is more or less inevitable under hill conditions, but the Civil Surgeon is being asked to revise the arrangements for distributing lymph. It seems that in the district of Lakhimpur the extra vaccinators who were engaged on my recommendations have been employed to very good purpose, as in spite of the influenza epidemic Lakhimpur shares with Sylhet the credit of having performed more vaccination operations during this triennium than in the previous one, the actual gain being 9,238.

*Statement showing the total number of persons vaccinated by all agencies,* viz., *vaccine department, dispensaries, tea gardens, railways and jails during the triennium* 1914-17 *to* 1917-20.

| Districts. | Population. | 1914-15. | 1915-16. | 1916-17. | Total number of the triennium. | 1917-18. | 1918-19. | 1919-20. | Total number of the triennium. | Difference. Increase. | Difference. Decrease. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Cachar ... ... | 497,463 | 19,438 | 19,539 | 48,525 | 87,502 | 33,337 | 20,283 | 32,115 | 85,735 | ... | 1,767 |
| Sylhet ... ... | 2,472,671 | 113,010 | 113,168 | 139,824 | 366,002 | 112,812 | 122,628 | 151,993 | 387,433 | 21,431 | ... |
| Khasi and Jaintia Hills ... | 235,069 | 10,304 | 5,645 | 11,093 | 27,042 | 9,366 | 6,000 | 13,432 | 28,698 | 1,656 | ... |
| Naga Hills ... ... | 149,623 | 4,833 | 4,563 | 5,179 | 14,575 | 5,233 | 9,440 | 5,412 | 20,085 | 5,510 | ... |
| Lushai Hills ... ... | 91,204 | 6,044 | 5,433 | 5,231 | 16,708 | 5,950 | 2,928 | 8,886 | 17,764 | 1,056 | ... |
| Goalpara ... ... | 600,643 | 27,334 | 25,743 | 21,493 | 74,570 | 22,448 | 16,051 | 26,508 | 65,007 | ... | 9,563 |
| Kamrup ... ... | 667,828 | 44,394 | 38,823 | 40,013 | 123,230 | 49,358 | 30,014 | 35,487 | 114,859 | ... | 8,371 |
| Darrang ... ... | 377,314 | 13,529 | 16,293 | 13,337 | 43,159 | 14,749 | 4,741 | 16,658 | 36,148 | ... | 7,011 |
| Nowgong ... ... | 303,506 | 13,268 | 13,520 | 13,883 | 40,671 | 14,185 | 12,495 | 13,564 | 40,244 | ... | 427 |
| Sibsagar ... ... | 690,299 | 24,245 | 28,831 | 37,631 | 90,707 | 31,464 | 19,705 | 33,679 | 84,848 | ... | 5,859 |
| Lakhimpur ... ... | 468,989 | 19,742 | 17,499 | 13,873 | 51,105 | 23,155 | 15,388 | 22,800 | 60,343 | 9,238 | ... |
| Garo Hills ... ... | 158,936 | 9,755 | 9,246 | 7,967 | 26,968 | 6,348 | 6,116 | 5,944 | 18,408 | ... | 7,960 |
| Manipur State ... ... | 346,222 | 14,120 | 14,104 | 13,075 | 41,299 | 26,004 | 22,837 | 73,305 | 122,146 | 80,847 | ... |
| North-East Frontier ... | ... | ... | ... | 1,138 | 1,138 | 1,014 | 558 | 2,083 | 3,655 | 2,517 | ... |
| Total of the Province ... | 7,059,857 | 320,016 | 312,308 | 371,662 | 1,004,076 | 354,373 | 289,184 | 441,866 | 1,085,373 | 122,255 | 40,958 |

Net increase 81,297.

9. *Composition and strength of the inspecting staff.*—The strength of the subordinate inspecting staff was the same as in the preceding triennium, being composed as follows :—

| | Rs. |
|---|---|
| Two 1st grade Inspectors ... ... ... ... | 50 each |
| Two 2nd „ „ ... ... ... ... ... | 45 „ |
| Four 3rd „ „ ... ... ... ... ... | 40 „ |
| Six 1st grade Sub-Inspectors ... ... ... ... | 30 „ |
| Fourteen 2nd grade „ ... ... ... ... | 25 „ |

10. *Verification by the inspecting staff.*—Out of 314,160 primary operations and 104,285 re-vaccinations performed during the year 1919-20, the district Civil Surgeons inspected 6·26 per cent. of primary operations and 6·28 of re-vaccinations, as compared with 5·83 and 4·49, respectively, in 1918-19 and 6·98 and 5·42, respectively, in 1917-18, the average of the triennium under report being 6·35 and 5·39, respectively, as against 6·62 and 6·73 in the preceding triennium. During 1919-20, the Civil Surgeon of Goalpara Captain C. Bancroft, I.M.D., headed the list of vaccination inspections with a total of 2,741, Colonel MacLeod in Lakhimpur inspected 1,314, followed by Dr. Dodds Price in Nowgong with 1,303, and Dr. Madhok in Cachar with 1,221, Major McCoy in Darrang inspected 765 and Dr. Neogi, in Kamrup, 666, while in Sylhet, Colonel Wood and his Assistant Surgeons inspected 13,216 operations. In Sibsagar the Civil Surgeon Major Macdonald, I.M.S., inspected none at all. In the hills districts, Major L. B. Scott, with 957 inspections, heads the list, followed by Dr. Monrowd in the Garo Hills, with 310, Dr. Blinkworth in the Lushai Hills, with 156 and Dr. Chaliha, Naga Hills, with 97. In Manipur, out of 30,558 primary operations and 42,747 re-vaccinations the Civil Surgeon Dr. S. R. Bhattacharya inspected 293 primary and 2,839 re-vaccinations.

The subordinate inspecting staff inspected 51·35 per cent. of primary operations and 39·25 of re-vaccinations in 1919-20, as compared with 54·86 and 59·66, respectively in 1918-19 and 55·18 and 40·86, respectively, in 1917-18. The percentage of inspection of primary operations was the highest in the district of the Khasi and Jaintia Hills (93·79), other districts showing good results being Nowgong (81·03) and Sibsagar (73·77) and the percentage was below average in the districts of Garo Hills (20·19), Lushai Hills (38·95), Darrang (28·67), Kamrup (31·21) and Naga Hills (40·46). The percentage of inspections in Manipur was also low.

11. *Vaccination in compulsory areas.*—The estimated number of children under one year of age available for vaccination amounted to 3,125 in 1919-20 and of this number 58·78 per cent. were successfully vaccinated in the towns in which vaccination is compulsory, as compared with 48·09 in 1918-19 and 53 per cent. in 1917-18 and 57·59, the average of the preceding triennium. The degree of protection afforded to infants varies in different towns. In 1919-20 in the town of Sibsagar, more than the number of children born during the year were vaccinated owing to the importation of unprotected children into the town. In Golaghat and Doom Dooma, all available infants were vaccinated before reaching one year of age, while the percentage was between 80 and 90 in Nowgong and Tezpur, between 70 and 80 in Dibrugarh, Shillong and Nazira, between 60 and 70 in Goalpara, Jorhat and Maulvi Bazar and between 50 and 60 in Habiganj, Dhubri and Gauhati. The percentage was low in Sunamganj (17·80), Silchar (29·74), Mangaldai (30·00), Karimganj (33·33) and Barpeta (39·87). It should be noted however that these figures are to some extent misleading as a measure of infant vaccination, as they only refer to the number of children under one year of age who have been vaccinated during the year, the balance being children, who are not yet 12 months old whose parents prefer to postpone the operation till their children are nearer one year old, and of them only those who die or leave the town before vaccination, escape protection. These observations are based on inspections of the working of the compulsory vaccination Act performed by myself and my staff in the course of municipal inspections and I have satisfied myself that the provisions of the compulsory Act are now for the most part satisfactorily enforced and that few, if any, children born in these towns escape vaccination after one year of age. Doom Dooma is the only town to which compulsory Act was extended during the triennium.

A proposal to make vaccination compulsory in certain rural areas in which vaccination is dangerously neglected was submitted to Government during the triennium but it was not accepted, except in regard to areas in which a village authority under the Assam Local Self-Government Act, 1915, has been constituted. The application of this measure to some of these new areas is now under consideration although such areas are not ordinarily those in which the measure is most required.

12. *Vaccine Depôt.*—The number of capillary tubes loaded during the year 1919-20 was 799,297 as compared with 483,385 in 1918-19 and 561,854 in 1917-18 and 571,232, the average of the preceding triennium. The increased production in 1919-20 was to meet the demands arising from the activity which was displayed in making up the arrears of the previous year. The number of calves inoculated in 1919-20 was 651 lymph being taken from 553 only, the remaining 98 calves being rejected for failure of operations in 18, illness in 23 and ulceration and unsatisfactory

vesicles in 57. An outbreak of cattle-disease in January 1920 accounts for a considerable number of rejections. The average number of tubes filled per calf in 1919-20 was 1,445, as compared with 1,185 in 1918-19 and 1,778 in 1917-18.

The subjoined table shows the expenditure incurred in the Vaccine Depôt in the last three years :—

| — | 1917-18. | 1918-19. | 1919-20. |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| | Rs. a. p. | Rs. a. p. | Rs. a. p. |
| Establishment ... ... ... | 3,658 11 8 | 3,763 8 8 | 3,676 9 11 |
| Purchase of calves ... ... ... | 2,531 4 0 | 3,408 12 0 | 4,645 0 0 |
| Feed of calves ... ... ... | 468 11 0 | 588 14 6 | 825 0 0 |
| Purchase of vaccine tubes ... ... | ..... | 2,632 10 0 | 4,875 7 0 |
| Miscellaneous ... ... ... | 1,149 6 0 | 722 14 0 | 1,071 7 6 |
| Total ... ... | 7,808 0 8 | 11,116 11 2 | 15,093 8 5 |

The cost per tube works out to 3·1 pies in 1919-20, 4·01 pies in 1918-19 and 3·3 pies in 1917-18. The amount paid for purchase of calves shows an upward tendency and the attention of the Superintendent will be directed to this with a view to a possible reduction.

The subordinate charge of the Depôt was held throughout the triennium by Sub-Assistant Surgeon Narayan Chandra Das Gupta under whose keen and intelligent supervision the work of the Depôt has been efficiently performed.

13. *Cost of the Department.*—The total expenditure of the Department amounted to Rs. 71,167-8-9 in 1919-20, as compared with Rs. 58,247-4-5 in 1918-19 and Rs. 55,000-11-10 in 1917-18.

Of the increase of Rs. 12,920-4-4 in the cost of the Department in 1919-20 over that of 1918-19, Rs. 8,043-6-7 was on account of entertainment of additional vaccinators, Rs. 542-1-3 was on account of travelling allowance, Rs. 429 on account of contingencies, and Rs. 3,979-13-3 on account of expenditure in Vaccine Depôt under the heads Purchase of Vaccine tubes (Rs. 2,242-13) and of calves (Rs. 1,236-4). Of the excess of Rs. 8,043-6-7 on account of the pay and allowances of vaccinators, Rs. 7,144-5-5 was met by Local Boards, Rs. 729-3-10 by Manipur State, Rs. 148-15-1 by Government and Rs. 20-11-3 by Municipalities.

The average cost of each successful case of vaccination was for the province Re. 0-3-3, as compared with Re. 0-3-11 in 1918-19 and Re. 0-3-2 in 1917-18.

14. *General.*—In 1919-20, a total of 18,096 operations is reported to have been performed in tea gardens by garden doctors against 16,280 in 1918-19 and 28,927 in 1917-18.

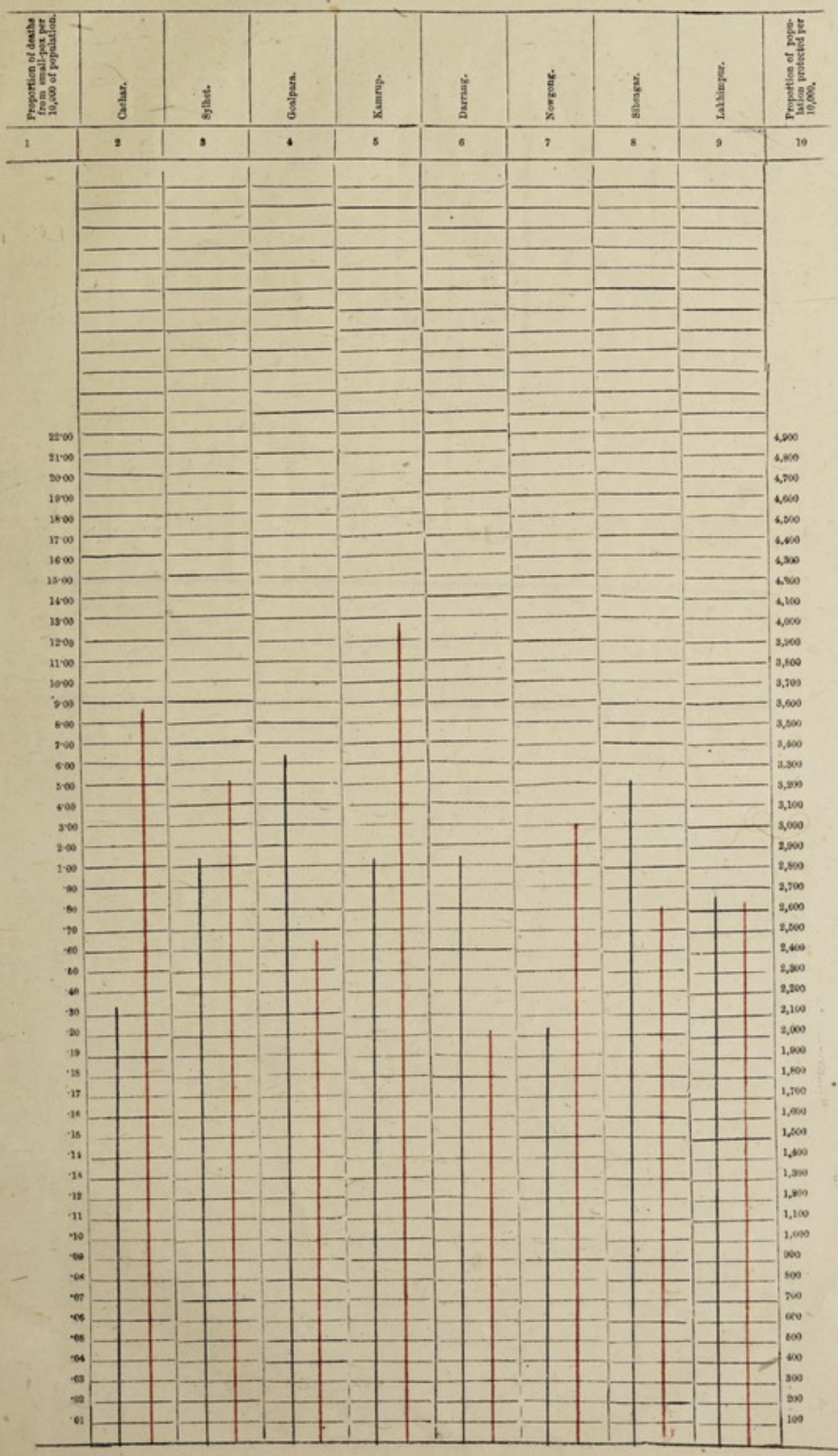
In the supply of returns regarding the results of vaccination operations performed on tea gardens, great laxity prevails and on account of the non-submission of these returns Civil Surgeons are unable to check indents for lymph from tea gardens which in consequence have to be transmitted without scrutiny for compliance by the Superintendent of the Vaccine Depôt. Blind compliance with these indents coupled with a free supply naturally tends to an extravagant use of the lymph and to check this I propose to direct that in future Civil Surgeons must check each tea garden indent against the number of operations performed on that garden in the previous year, passing indents in accordance with what appear to be the normal requirements and making further enquiries in regard to those gardens from which returns have not been received.

The percentage of success reported from tea gardens in 1919-20 were 94·38 for primary operations and 78·92 for re-vaccinations. The total number of operations reported to have been done in Jails, Lunatic Asylum, Police hospitals and coolie depôts by the respective medical officers in charge was 5,152 and 173 operations were reported by railway agencies.

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* 1913-14 *to* 1919-20.

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



STATEMENTS.

A.—VACCINE

*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 | 6 |
| | | | | | Male. | Female. | Total. | | | |
| | SURMA VALLEY AND HILL DISTRICTS. | | | | | | | | | |
| 1 | Cachar ... ... ... | 497,463 | 139 | 32 | 13,984 | 11,705 | 25,689 | 803 | 21,957 | 2,271 |
| 2 | Sylhet ... ... ... | 2,472,671 | 458 | 121 | 76,520 | 68,722 | 145,242 | 1,200 | 117,658 | 9,735 |
| 3 | Khasi and Jaintia Hills ... ... | 235,069 | 40 | 9 | 6,419 | 6,101 | 12,520 | 1,391 | 6,845 | 1,226 |
| 4 | Naga Hills ... ... ... | 149,623 | 48 | 5 | 2,857 | 2,497 | 5,354 | 1,070 | 3,370 | 555 |
| 5 | Lushai Hills ... ... ... | 91,204 | 12 | 5 | 4,316 | 3,944 | 8,260 | 1,652 | 6,335 | 141 |
| | Total of Surma Valley and Hill Districts | 3,446,030 | 136 | 172 | 104,096 | 92,969 | 197,065 | 1,145 | 156,165 | 13,928 |
| | ASSAM VALLEY DISTRICTS. | | | | | | | | | |
| 6 | Goalpara ... ... ... | 600,643 | 151 | 48 | 15,047 | 11,320 | 26,367 | 732* | 21,169 | 5,209 |
| 7 | Kamrup ... ... ... | 667,828 | 173 | 50 | 18,065 | 16,179 | 34,244 | 685 | 33,441 | 7,189 |
| 8 | Darrang ... ... ... | 377,314 | 110 | 27 | 8,425 | 6,438 | 14,863 | 550 | 11,179 | 1,022 |
| 9 | Nowgong ... ... ... | 303,596 | 79 | 22 | 6,954 | 5,930 | 12,884 | 585 | 11,923 | 2,412 |
| 10 | Sibsagar ... ... ... | 690,299 | 138 | 52 | 16,742 | 14,970 | 31,712 | 609 | 25,717 | 2,702 |
| 11 | Lakhimpur ... ... ... | 468,989 | 103 | 31 | 9,585 | 8,540 | 18,125 | 584 | 16,954 | 2,317 |
| 12 | Garo Hills ... ... ... | 158,936 | 50 | 6 | 3,010 | 2,905 | 5,915 | 985 | 5,498 | 3,148 |
| | Total of Assam Valley Districts ... | 3,267,605 | 118 | 236 | 77,828 | 66,282 | 144,110 | 610 | 125,881 | 23,999 |
| 13 | Manipur State ... ... ... | 346,222 | 41 | 20 | 34,951 | 29,755 | 64,706 | 4,313† | 26,595 | 5,315 |
| 14 | North-East Frontier District ... | ... | ... | 2 | 1,063 | 382 | 1,445 | 722 | 732 | 29 |
| | *Total Vaccine Department* ... | *7,059,857* | *115* | *430* | *217,938* | *189,388* | *407,326* | *947* | *309,373* | *43,271* |
| | Total Dispensaries ... ... | ... | ... | ... | ... | ... | 11,119 | ... | 4,787 | 683 |
| | Total tea-gardens by garden agencies ... | ... | ... | ... | 9,115 | 8,981 | 18,096 | ... | 13,804 | 5,593 |
| | Total Jails, Lunatic Asylum, Police hospitals and Coolie Depôts. | ... | ... | ... | 4,848 | 304 | 5,152 | ... | 683 | 8 |
| | Total Railways ... ... ... | ... | ... | ... | 122 | 51 | 173 | ... | 45 | 6 |
| | Grand total ... | 7,059,857 | 115 | 430 | 232,023 | 193,724 | 441,866 | 947 | 328,692 | 49,561 |

* Calculated on the average of 36 vaccinators who worked for the whole season.
† " " 15 " " "

*Sum*

| | 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) ... ... ... | 309,373 | 97,953 | 309,373 | 97,953 |
| By dispensary staff (Statement III) ... ... ... | 4,787 | 6,332 | 4,787 | 6,332 |
| By other agencies—tea-gardens, Jail hospital, Police hospital and cholera hospital and coolie depôts. | 14,532 | 8,889 | 14,532 | 8,889 |
| Total ... | 328,692 | 113,174 | 328,692 | 113,174 |

DEPARTMENT.

*the Province of Assam during the year* 1919-20.

| 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 death 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 |
| 14,622 | 20,702 | 195 | 3,732 | 2,028 | 186 | 95·12 | 57·19 | 45·69 | ·88 | 4·98 | 17,166 | 34·50 | 318 | ·63 |
| 78,446 | 113,177 | 488 | 27,584 | 14,639 | 915 | 96·59 | 54·89 | 51·69 | ·41 | 3·35 | 104,400 | 42·22 | 557 | ·22 |
| 3,463 | 6,834 | ... | 5,675 | 3,781 | .... | 99·83 | 66·62 | 45·15 | ... | ... | 7,112 | 30·25 | 11 | ·04 |
| 1,699 | 2,969 | 136 | 1,984 | 1,516 | 86 | 91·80 | 81·45 | 20·17 | 4·03 | 4·33 | 4,526 | 3[illegible]·24 | ... | ... |
| 2,268 | 5,290 | 240 | 1,9[illegible]5 | 1,291 | 64 | 86·79 | 69·37 | 72·15 | 3·78 | 3·32 | 2,999 | 32·88 | ... | ... |
| 100,508 | 148,972 | 1,0[illegible]9 | 40,900 | 23,285 | 1,251 | 96·04 | 58·73 | 49·98 | ·67 | 3·06 | 136,203 | 39·52 | 883 | ·25 |
| 14,521 | 19,4[illegible]0 | 267 | 5,198 | 4,134 | 149 | 92·95 | 81·87 | 39·23 | 1·26 | 2·86 | 20,294 | 33·78 | 437 | ·72 |
| 19,803 | 31,961 | 563 | 803 | 425 | 97 | 96·62 | 60·31 | 48·40 | 1·08 | 12·05 | 36,928 | 55·29 | 858 | 1·28 |
| 6,498 | 9,622 | 377 | 3,084 | 1,540 | 712 | 89·07 | 51·81 | 29·58 | 3·37 | 19·32 | 10,306 | 27·31 | 120 | ·31 |
| 8,049 | 11,810 | 1 | 961 | 891 | 1 | 99·06 | 92·81 | 41·83 | ·008 | ·10 | 12,232 | 40·29 | 45 | ·14 |
| 22,017 | 24,719 | 238 | 5,995 | 3,882 | 198 | 97·01 | 66·96 | 41·43 | ·92 | 3·30 | 21,830 | 31·62 | 682 | ·98 |
| 12,686 | 16,420 | 43 | 1,171 | 495 | 324 | 97·09 | 58·44 | 36·06 | ·25 | 27·66 | 12,093 | 25·78 | 61 | ·13 |
| 1,628 | 4,8[illegible]5 | 416 | 417 | 311 | 28 | 94·54 | 79·94 | 32·18 | 7·76 | 6·71 | 6,808 | 42·83 | 23 | ·14 |
| 84,893 | 118,767 | 1,705 | 18,229 | 11,678 | 1,509 | 95·64 | 69·83 | 39·92 | 1·35 | 8·27 | 120,491 | 36·87 | 2,226 | ·66 |
| 10,844 | 16,159 | 9,760 | 38,111 | 27,603 | 8,075 | 95·98 | 91·69 | 126·39 | 36·69 | 21·45 | 14,404 | 41·60 | ... | ... |
| 521 | 617 | 83 | 713 | 505 | 79 | 95·06 | 79·65 | ... | 11·20 | 11·07 | ... | ... | ... | ... |
| *196,766* | *284,515* | *12,607* | *97,953* | *63,071* | *10,914* | *95·87* | *72·46* | *49·23* | *4·07* | *11·14* | *271,095* | *38·39* | *3,112* | *·44* |
| 2,999 | 3,892 | 590 | 6,332 | 3,981 | 1,333 | 92·73 | 79·63 | .. | 12·32 | 21·05 | 2,235 | ... | ... | ... |
| 6,868 | 13,006 | 24 | 4,292 | 3,326 | 78 | 94·38 | 78·92 | ... | ·17 | 1·81 | 22,141 | ... | ... | ... |
| 77 | 416 | 81 | 4,469 | 1,644 | 742 | 69·10 | 44·11 | ... | 11·86 | 16·60 | 1,135 | ... | ... | ... |
| 30 | 45 | ... | 128 | 101 | 1 | 100·0 | 79·52 | ... | ... | ·78 | 92 | ... | ... | ... |
| 206,740 | 301,874 | 13,302 | 113,174 | 72,123 | 13,068 | 95·71 | 72·04 | 52·97 | 4·04 | 11·54 | 296,701 | 42·02 | 3,112 | ·44 |

*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 |
| | | | | | | | Rs. a. p. | Rs. a. p |
| 95·87 | 72·46 | 430 | 947 | 43,271 | 196,766 | 49·23 | 71,167 8 9 | 0 3 3 |
| 92·73 | 79·63 | ... | ... | 683 | 2,999 | ... | ... | ... |
| 93·38 | 50·45 | ... | ... | 5,607 | 6,975 | ... | ... | ... |
| 95·71 | 72·04 | 430 | 947 | 49,561 | 206,740 | 52·97 | 71,167 8 9 | 0 3 3 |

*Statement No. II—Showing the cost of Vaccination in*

| No. | District. | European supervising officer. | Pay. | Native supervising officer. | Pay. | Paid vaccinators. | Pay. | Licensed vaccinators. | Pay. | Clerks. | Pay. | Peons, etc. | Pay. | Total pay of establishment. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Expen | | | | | | | |
| 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 | 1,016 0 0 | 32 | 2,635 10 11 | ... | ... | ... | ... | ... | ... | 3,651 10 11 |
| 2 | Sylhet ... ... | ... | ... | 6 | 2,270 0 0 | 121 | 10,593 7 2 | ... | ... | ... | ... | ... | ... | 12,863 7 2 |
| 3 | Khasi and Jaintia Hills | ... | ... | 2 | 660 0 0 | 9 | 1,725 3 10 | ... | ... | ... | ... | ... | ... | 2,385 3 10 |
| 4 | Naga Hills ... | ... | ... | 1 | 302 8 0 | 5 | 745 13 0 | ... | ... | ... | ... | ... | ... | 1,048 5 0 |
| 5 | Lushai Hills ... | ... | ... | 1 | 272 7 1 | 5 | 552 9 9 | ... | ... | ... | ... | ... | ... | 825 0 10 |
| 6 | Goalpara ... ... | ... | ... | 3 | 979 0 0 | 48 | 2,419 4 7 | ... | ... | ... | ... | ... | ... | 3,398 4 7 |
| 7 | Kamrup ... ... | ... | ... | 3 | 1,040 0 0 | 50 | 3,359 7 1 | ... | ... | ... | ... | ... | ... | 4,399 7 1 |
| 8 | Darrang ... ... | ... | ... | 2 | 850 0 0 | 27 | 1,905 14 4 | ... | ... | ... | ... | ... | ... | 2,755 14 4 |
| 9 | Nowgong ... ... | ... | ... | 2 | 846 0 0 | 22 | 1,739 6 11 | ... | ... | ... | ... | ... | ... | 2,585 6 11 |
| 10 | Sibsagar ... ... | ... | ... | 3 | 1,056 3 9 | 52 | 3,344 3 0 | ... | ... | ... | ... | ... | ... | 4,400 6 9 |
| 11 | Lakhimpur ... | ... | ... | 2 | 881 7 3 | 31 | 2,633 9 2 | ... | ... | ... | ... | ... | ... | 3,515 0 5 |
| 12 | Garo Hills ... | ... | ... | 1 | 336 0 0 | 6 | 714 6 2 | ... | ... | ... | ... | ... | ... | 1,050 6 2 |
| 13 | Manipur State ... | ... | ... | 1 | 240 0 0 | 20 | 1,914 13 8 | ... | ... | ... | ... | ... | ... | 2,154 13 8 |
| 14 | North-East Frontier District. | ... | ... | ... | ... | 2 | 193 0 9 | ... | ... | ... | ... | ... | ... | 193 0 9 |
| | Total of Districts ... | ... | ... | 29 | 10,749 10 1 | 430 | 34,476 14 4 | ... | ... | ... | ... | ... | ... | 45,226 8 5 |
| | Shillong Vaccine Depôt | 1 | 600 0 0 | 1 | 1,080 0 0 | 12 | 1,996 9 11 | ... | ... | ... | ... | ... | ... | 3,676 9 11 |
| | Total for the Province | 1 | 600 0 0 | 30 | 11,829 10 1 | 442 | 36,473 8 3 | ... | ... | ... | ... | ... | ... | 48,903 2 4 |

*the Province of Assam during the year* 1919-20.

| diture. | | | | Paid from— | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Contingencies. | | | | | | | | | | |
| Travelling allowance. | Cost of Vaccine. | Other contingencies. | Total cost. | Imperial Fund. | Provincial Fund. | Local Fund. | Municipalities. | Native States. | Total. | Number of all successful vaccinations and re-vaccinations. | Average cost of each successful case. |
| 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. |
| 536 3 0 | ... | 108 10 6 | 4,286 8 5 | ... | 1,837 7 7 | 2,221 5 6 | 207 11 4 | ... | 4,286 8 5 | 12,13[illegible] | 0 3 0 |
| 2,144 10 0 | ... | 371 8 3 | 15,379 9 5 | ... | 4,049 11 5 | 11,014 13 3 | 315 0 9 | ... | 15,379 9 5 | 127,81[illegible] | 0 2 0 |
| 803 14 0 | ... | 20 9 0 | 3,299 10 10 | ... | 3,107 10 10 | ... | 192 0 0 | ... | 3,299 10 10 | 10,8[illegible] | 0 4 10 |
| 673 5 0 | ... | 7 0 0 | 1,728 10 0 | ... | 1,728 10 0 | ... | ... | ... | 1,728 10 0 | 4,51[illegible] | 0 6 1 |
| 144 2 0 | ... | 62 12 3 | 1,031 15 1 | ... | 1,031 15 1 | ... | ... | ... | 1,031 15 1 | 6,58[illegible] | 0 2 6 |
| 145 12 2 | ... | 397 0 3 | 3,941 1 0 | ... | 1,193 3 11 | 2,589 9 1 | 158 4 0 | ... | 3,941 1 0 | 23,56 | 0 2 8 |
| 564 0 3 | ... | 414 10 0 | 5,378 1 4 | ... | 1,867 9 8 | 3,086 8 5 | 423 15 [illegible] | ... | 5,378 1 4 | 32,39[illegible] | 0 2 7 |
| 877 14 0 | ... | 98 2 0 | 3,731 14 4 | ... | 1,732 8 0 | 1,790 6 10 | 208 15 6 | ... | 3,731 14 4 | 11,16[illegible] | 0 5 4 |
| 751 5 9 | ... | 16 15 0 | 3,353 11 8 | ... | 1,539 10 6 | 1,743 0 8 | 71 0 6 | ... | 3,353 11 8 | 17,70[illegible] | 0 4 2 |
| 465 5 6 | ... | 120 0 0 | 4,965 12 3 | ... | 1,641 9 3 | 2,861 3 8 | 482 15 4 | ... | 4,965 12 3 | 28,60[illegible] | 0 2 9 |
| 679 5 0 | ... | 165 12 6 | 4,360 1 11 | ... | 1,488 1 9 | 2,589 2 11 | 291 13 3 | ... | 4,360 1 11 | 16,91[illegible] | 0 4 1 |
| 561 11 6 | ... | 9 10 0 | 1,621 11 8 | ... | 1,621 11 8 | ... | ... | ... | 1,621 11 8 | 5,11[illegible] | 0 5 0 |
| ... | 547 12 0 | ... | 2,702 9 8 | ... | ... | ... | ... | 2,702 9 8 | 2,702 9 8 | 43,7[illegible]2 | 0 0 11 |
| 79 10 0 | ... | ... | 272 10 9 | ... | 272 10 9 | ... | ... | ... | 272 10 9 | 1,12[illegible] | 0 3 10 |
| 8,507 2 2 | 547 12 0 | 1,792 9 9 | 56,074 0 4 | ... | 23,132 8 5 | 27,887 2 4 | 2,351 11 11 | 2,702 9 8 | 56,074 0 4 | 347,586 | 0 2 6 |
| ... | ... | 11,416 14 6 | 15,093 8 5 | ... | 15,093 8 5 | ... | ... | ... | 15,093 8 5 | ... | ... |
| 8,507 2 2 | 547 12 0 | 13,209 8 3 | 71,167 8 9 | ... | 38,226 0 10 | 27,887 2 4 | 2,351 11 11 | 2,702 9 8 | 71,167 8 9 | 347,586 | 0 3 3 |

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 ... ... | ... | ... | 10 | ... | ... | ... | ... | ... | ... |
| Sylhet ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Khasi and Jaintia Hills | ... | ... | 912 | ... | 141 | 19 | 74 | 123 | 16 |
| Naga Hills ... | ... | ... | 58 | ... | 53 | 15 | 33 | 50 | ... |
| Lushai ,, ... | ... | ... | 6 6 | ... | 383 | 17 | 192 | 371 | ... |
| Goalpara ... | ... | ... | 30 | ... | 8 | ... | 7 | 7 | ... |
| Kamrup ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Darrang ... ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Nowgong ... | ... | ... | 217 | ... | 136 | 7 | 109 | 116 | ... |
| Sibsagar ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Lakhimpur ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Garo Hills ... | ... | ... | 29 | ... | 20 | 3 | 16 | 19 | .. |
| Manipur State ... | ... | ... | 8,599 | ... | 3,963 | 616 | 2,507 | 3,123 | 574 |
| North-East Frontier District. | ... | ... | 638 | ... | 83 | 6 | 61 | 83 | ... |
| Total ... | ... | ... | 11,119 | ... | 4,787 | 683 | 2,999 | 3,892 | 590 |

*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 | | | | | | | |
| | 1910-11. | | 1911-12. | | 1912-13. | | 1913-14. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Government ... ... | 25,926 | 23,580 | 24,950 | 24,146 | 30,130 | 28,802 | 33,014 | 31,655 |
| Dispensaries ... ... | 2,549 | 2,128 | 1,464 | 1,390 | 1,036 | 937 | 1,005 | 900 |
| Municipal ... ... | 2,347 | 2,237 | 3,262 | 3,023 | 3,517 | 3,093 | 2,897 | 2,865 |
| Local Funds ... ... | 161,234 | 154,616 | 179,887 | 176,566 | 179,380 | 176,043 | 179,040 | 176,981 |
| Licensed vaccinators ... | 31,811 | 29,902 | 37,963 | 37,231 | 45,790 | 44,336 | 44,537 | 43,523 |
| Apprentices ... ... | 4,682 | 4,563 | 16,762 | 16,411 | 13,669 | 13,542 | 15,329 | 15,007 |
| Native States ... ... | 13,358 | 11,612 | 13,193 | 11,756 | 13,656 | 11,521 | 13,626 | 12,343 |
| Total ... ... | 241,907 | 228,638 | 277,481 | 270,523 | 287,178 | 278,274 | 289,448 | 283,274 |

## VACCINATION.

*in the Province of Assam during the year* 1919-20.

| 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 |
| 10 | 6 | ... | ... | 60·00 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... |
| 771 | 86 | 635 | 98·40 | 63·23 | 11·34 | 82·36 |
| 5 | 4 | ... | 94·34 | 80·00 | ... | ... |
| 243 | 146 | 14 | 96·86 | 63·75 | ... | 5·76 |
| 22 | 8 | ... | 87·50 | 36·36 | ... | ... |
| ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... |
| 81 | 28 | 5 | 85·29 | 36·84 | ... | 6·17 |
| ... | ... | ... | ... | ... | ... | ... |
| ... | ... | ... | ... | ... | ... | ... |
| 9 | 3 | 4 | 95·00 | 60·00 | ... | 44·44 |
| 4,636 | 3,554 | 640 | 92·15 | 88·93 | 14·48 | 13·80 |
| 555 | 146 | 35 | 100·00 | 28·07 | ... | 6·30 |
| 6,332 | 3,981 | 1,333 | 92·73 | 79·63 | 12·32 | 21·05 |

*and the number of those persons who were success/ully vaccinated in the Province of Assam mentioned official years.*

primarily 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. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31st March. | | | | | | | | | | | |
| 1914-15. | | 1915-16. | | 1916-17. | | 1917-18. | | 1918-19. | | 1919-20. | |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 23,384 | 20,649 | 21,309 | 18,365 | 23,969 | 22,218 | 23,473 | 20,246 | 17,309 | 15,570 | 22,970 | 20,682 |
| 1,580 | 1,430 | 1,095 | 915 | 2,553 | 2,149 | 1,929 | 1,704 | 1,406 | 1,216 | 4,787 | 3,892 |
| 2,828 | 2,684 | 5,575 | 5,389 | 5,110 | 4,793 | 4,495 | 4,199 | 4,072 | 3,792 | 4,606 | 4,276 |
| 169,629 | 163,948 | 173,757 | 168,724 | 213,215 | 208,712 | 201,759 | 189,413 | 170,387 | 162,163 | 249,931 | 238,218 |
| 34,560 | 32,706 | 25,697 | 24,562 | 18,942 | 18,154 | 18,760 | 17,188 | 14,316 | 12,931 | ... | ... |
| 17,208 | 16,645 | 16,342 | 15,966 | 6,445 | 6,235 | 7,888 | 7,614 | 7,161 | 7,011 | 5,271 | 5,180 |
| 13,756 | 12,595 | 13,974 | 12,966 | 12,946 | 12,023 | 12,947 | 9,909 | 8,689 | 7,265 | 26,595 | 16,159 |
| 262,945 | 250,657 | 257,749 | 246,917 | 283,180 | 274,284 | 271,251 | 250,273 | 223,340 | 209,948 | 314,160 | 288,407 |

*Statement No. V—Showing particulars of Vaccination verified by Inspecting Officers for the year* 1919-20.

| 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 ... ... | 21,957 | 3,742 | 1,163 | 58 | 12,052 | 1,428 | 5·29 | 1·54 | 54·88 | 38·16 | 98·02 | 74·14 | 93·45 | 56·38 | 95·12 | 57·19 |
| Sylhet ... ... | 117,658 | 27,584 | 10,519 | 2,697 | 65,540 | 7,710 | 8·94 | 9·77 | 55·70 | 27·95 | 94·54 | 59·90 | 94·72 | 49·2[illegible] | 90·59 | 54·89 |
| Khasi and Jaintia Hills ... | 6,986 | 6,446 | 702 | 255 | 6,762 | 3,501 | 10·04 | 3·95 | 96·79 | 55·79 | 98·43 | 87·45 | 99·49 | 55·3[illegible] | 99·83 | 66·62 |
| Naga Hills ... ... | 3,423 | 1,989 | 128 | 173 | 1,385 | 1,297 | 3·73 | 8·69 | 40·46 | 65·20 | 89·0[illegible] | 86·70 | 83·80 | 77·3[illegible] | 91·80 | 81·45 |
| Lushai ... ... ... | 6,718 | 2,168 | 112 | 44 | 2,617 | 953 | 1·66 | 2·02 | 38·95 | 43·96 | 94·6 | 25·00 | 87·58 | 67·[illegible] | 86·79 | 69·37 |
| Goalpara ... ... | 21,177 | 5,[illegible]20 | 2,454 | 287 | 12,886 | 3,240 | 11·58 | 5·49 | 60·84 | 62·06 | 88·71 | 65·71 | 96·95 | 80·6[illegible] | 92·95 | 81·87 |
| Kamrup ... ... | 33,4[illegible]9 | 803 | 66[illegible] | ... | 10,478 | 122 | 1·99 | ... | 31·21 | 15·19 | Not furnished | | 84·83 | 2[illegible] | 96·62 | 60·31 |
| Darrang ... ... | 11,179 | 3,684 | 723 | 42 | 3,706 | 106 | 6·46 | 1·14 | 28·67 | 2·87 | 92·25 | 73·81 | 93·26 | 62·[illegible] | 89·07 | 51·81 |
| Nowgong ... ... | 12,[illegible]69 | 1,042 | 1,254 | 49 | 9,772 | 943 | 10·39 | 4·70 | 81·03 | 90·49 | 97·90 | 77·55 | 99·10 | 84·7 | 90·06 | 92·81 |
| Sibsagar ... ... | 25,717 | 5,905 | ... | ... | 18,968 | 3,197 | ... | ... | 73·77 | 53·32 | ... | ... | 93·72 | 65·1[illegible] | 97·01 | 66·96 |
| Lakhimpur ... ... | 16,954 | 1,171 | 1,314 | ... | 11,656 | 370 | 7·75 | ... | 68·75 | 31·59 | 96·68 | ... | 97·51 | 41·3[illegible] | 97·09 | 58·44 |
| Garo Hills ... ... | 5,518 | 428 | 310 | ... | 1,114 | 1 | 5·61 | ... | 20·19 | ·22 | 97·0[illegible] | ... | 95·19 | ... | 94·54 | 79·94 |
| Manipur State ... ... | 30,558 | 42,747 | 293 | 2,839 | 4,852 | 17,982 | ·95 | 6·64 | 15·87 | 42·06 | 96·58 | 79·53 | 97·1[illegible] | 93·8[illegible] | 95·98 | 91·89 |
| North-East Frontier district | 815 | 1,268 | 49 | 101 | 78 | 2 | 6·01 | 7·96 | 9·57 | ·15 | 93·00 | 52·00 | 83·0[illegible] | [illegible] | 95·06 | 79·65 |
| Total ... ... | 314,160 | 104,285 | 19,687 | 6,545 | 161,326 | 40,942 | 6·26 | 6·28 | 51·35 | 39·25 | 94·74 | 69·18 | 92·4[illegible] | 66·0[illegible] | 95·87 | 72·46 |

*Statement No. VI—Showing the number of vaccinations performed in Municipal towns on children under one year of age during the year* 1919-20.

| 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 1920. | Date of extension of Vaccination Act to town. |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Cachar ... | Silchar ... | 224 | 29 | 58 | 21st January 1892. |
| Sylhet ... | Sylhet ... | 471 | 98 | 171 | 1st October 1882. |
| | Habiganj ... | 151 | 20 | 68 | 11th December 1913. |
| | Sunamganj ... | 166 | 20 | 26 | 28th June 1915. |
| | Karimganj ... | 93 | 9 | 28 | 27th July 1915. |
| | Maulvi Bazar ... | 91 | 27 | 43 | 16th April 1916. |
| Khasi & Jaintia Hills | Shillong ... | 403 | 81 | 229 | 21st June 1895. |
| | Total of Surma Valley and Hill Districts. | 1,599 | 284 | 623 | |
| Goalpara ... | Dhubri ... | 193 | 24 | 83 | 13th February 1891. |
| | Goalpara ... | 194 | 18 | 100 | 12th November 1890. |
| Kamrup ... | Gauhati ... | 383 | 20 | 182 | August 1882. |
| | Barpeta ... | 269 | 106 | 65 | 29th October 1915. |
| Darrang ... | Tezpur ... | 167 | 30 | 117 | 22nd May 1907. |
| | Mangaldai ... | 16 | 6 | 3 | 12th October 1916. |
| Nowgong ... | Nowgong ... | 190 | 20 | 152 | 7th April 1897. |
| Sibsagar ... | Sibsagar ... | 109 | 29 | 112 | 21st January 1892. |
| | Jorhat ... | 185 | 30 | 108 | 12th April 1892. |
| | Golaghat ... | 53 | 27 | 26 | 24th March 1892. |
| | Nazira ... | 82 | 11 | 50 | 1st December 1916. |
| Lakhimpur ... | Dibrugarh ... | 323 | 41 | 208 | September 1883. |
| | Doom Dooma ... | 11 | 3 | 8 | 21st October 1918. |
| | Total of Assam Valley Districts. | 2,175 | 365 | 1,214 | |
| | Total for the Province. | 3,774 | 649 | 1,837 | |

STATE

*Showing, side by side, the ratio per* 1,000 *of population of deaths*

| District. | 1910-11. | | 1911-12. | | 1912-13. | | 1913-14. | |
|---|---|---|---|---|---|---|---|---|
| | 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 ... ... ... | ·03 | 15,635 | ·002 | 16,641 | ·008 | 16,922 | ·006 | 19,596 |
| Sylhet ... ... ... | ·07 | 83,189 | ·38 | 108,987 | ·99 | 132,022 | ·47 | 113,226 |
| Khasi and Jaintia Hills . ... | ·04 | 5,026 | ·004 | 7,369 | ·13 | 10,740 | ·35 | 9,128 |
| Naga Hills ... ... | ... | 4,518 | ... | 4,836 | ... | 5,119 | ... | 6,363 |
| Lushai „ ... ... | ... | 2,799 | ... | 3,121 | ... | 3,123 | ... | 3,027 |
| Goalpara ... ... ... | ·28 | 19,065 | ·44 | 23,151 | ·69 | 19,731 | ·59 | 23,408 |
| Kamrup ... ... ... | ·58 | 25,006 | 1·21 | 39,178 | 1·89 | 39,978 | 1·02 | 42,323 |
| Darrang ... ... ... | ·30 | 10,036 | ·56 | 10,606 | ·50 | 10,964 | ·82 | 11,508 |
| Nowgong ... ... ... | 3·05 | 7,456 | ·44 | 8,469 | ·95 | 6,602 | ·43 | 12,946 |
| Sibsagar ... ... ... | ·19 | 21,089 | ·16 | 18,490 | ·09 | 18,298 | ·14 | 18,768 |
| Lakhimpur ... ... ... | ·05 | 14,470 | ... | 14,119 | ·006 | 14,063 | ·07 | 14,227 |
| Garo Hills ... ... ... | ·15 | 13,219 | ·01 | 15,161 | ·09 | 12,338 | ·84 | 22,813 |
| Manipur State ... ... | ... | 12,082 | ... | 12,025 | ... | 11,678 | ... | 12,498 |
| North-East Frontier district ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Total ... | ·28 | 233,590 | ·35 | 282,153 | ·67 | 301,648 | ·40 | 309,831 |

MENT No. VII.

*from small-pox and the number of successful vaccinations during the ten years ending* 1919-20.

| 1914-15. | | 1915-16. | | 1916-17. | | 1917-18. | | 1918-19. | | 1919-20. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |
| ... | 15,146 | ·008 | 13,641 | ·59 | 26,734 | 2·24 | 17,561 | ·49 | 14,244 | ·03 | 22,736 |
| ·14 | 100,597 | ·06 | 102,842 | ·26 | 120,578 | ·52 | 93,549 | ·11 | 104,435 | ·16 | 127,816 |
| ·64 | 8,108 | ·02 | 4,963 | ... | 9,385 | ·03 | 7,902 | ·11 | 5,395 | ... | 10,824 |
| ... | 4,572 | ... | 3,843 | ... | 4,811 | ... | 4,063 | ... | 7,766 | ... | 4,569 |
| ... | 3,481 | ·02 | 3,639 | ... | 3,610 | ... | 4,031 | ... | 2,380 | ... | 7,098 |
| ·78 | 24,185 | 1·07 | 23,236 | ·82 | 20,263 | ·79 | 19,822 | ·27 | 14,007 | ·66 | 23,579 |
| 2·03 | 40,178 | 3·10 | 35,050 | ·79 | 36,881 | ·74 | 44,802 | 1·65 | 27,727 | ·13 | 32,386 |
| ·26 | 12,092 | ·61 | 13,563 | ·61 | 11,130 | ·08 | 11,582 | ·08 | 3,163 | ·19 | 11,162 |
| ·24 | 12,494 | ·25 | 12,408 | ·31 | 13,106 | ·04 | 13,225 | ·05 | 11,722 | ·02 | 12,845 |
| ·18 | 18,077 | 1·22 | 22,813 | 1·35 | 29,676 | ·96 | 23,404 | ·81 | 15,182 | .58 | 28,601 |
| ·09 | 13,982 | ·06 | 10,282 | ·18 | 9,758 | ·16 | 15,905 | ·14 | 10,536 | ·09 | 16,915 |
| ·60 | 9,368 | ·39 | 8,171 | ·13 | 6,773 | ·98 | 5,023 | ... | 5,198 | ·06 | 5,138 |
| ... | 12,879 | ... | 13,094 | ... | 12,152 | ... | 18,159 | ... | 17,699 | ... | 50,439 |
| ... | ... | ... | ... | ... | 765 | ... | 707 | ... | 471 | ... | 1,351 |
| ·37 | 275,159 | ·58 | 267,545 | ·47 | 305,622 | ·59 | 280,335 | ·34 | 239,925 | ·20 | 355,459 |

A. S. P. O. (M. & E.) No. 22—231—23-7-1919—A. E. R.

# Resolution on the Vaccination Report of Assam for the three years ending 1919-20.

*Extract from the Proceedings of the Chief Commissioner of Assam in the Municipal Department, No. 4403M., dated the 22nd July 1920.*

READ—

Vaccination Report of the Province of Assam for the three years ending 1919-20.

## RESOLUTION.

THERE was an increase in the total number of operations performed during the three years under review, the figures being 1,085,373 as compared with 1,004,076 in the last three years. The increase appears to have been chiefly in the Manipur State. It would have been greater had not vaccinators been largely employed in combating the influenza epidemics of 1918-19 and 1919 20.

In 1919 the death-rate from small-pox was only ·20 per mille—the lowest figure recorded in the last ten years. The Chief Commissioner is glad to notice that, with the co-operation of District and Subdivisional Officers, the opposition of the Mahapurushia sect is being gradually overcome.

2. Licensed vaccinators have now been entirely replaced by paid vaccinators. In accordance with a scheme placed before them by the Sanitary Commissioner, most Local Boards have increased their staffs. The Chief Commissioner regrets that the Karimganj Local Board has not seen its way to do this.

3. The Sanitary Commissioner is satisfied that generally speaking the provisions of the Vaccination Act are being properly enforced in those areas in which vaccination is compulsory. His proposal to make vaccination compulsory in certain rural areas was considered in 1919, but could not be accepted in its entirety. It was decided to extend the Bengal Vaccination Act to those areas only where village authorities had been established, provided that such authorities consented.

4. It is clear from the figures given in the report that, in certain districts, both Civil Surgeons and the subordinate inspecting staff might with advantage have done more inspection.

5. Sir Nicholas Beatson Bell trusts that returns of vaccinations will, in future, be regularly sent in from tea gardens.

6. The Chief Commissioner thanks Major Young and those specially mentioned by him for their good work.

ORDERED that the Resolution and the Report be published in the *Assam Gazette*.

By order of the Chief Commissioner of Assam,

A. R. EDWARDS,

*Second Secretary to the Chief Commissioner of Assam.*

A. S. P. O. (M. & E.) No. 22—230—23-7-1920—O. M. R.